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Purpose: CERCLA Site Inspection

Site: Levin-Richmond Terminal Corp.
United Heckathorn Company
402 Wright Avenue
Richmond, CA 94804
Contra Costa County

Site ERRIS ID Number: CAD980673560

Inspection ID Number: C(86)C204

TDD Number: R9-8606-04A

FIT Investigators: Douglas D. Russell
Mike Grant

Date of Inspection: August 14, 1986

Report Prepared by: Douglas D. Russell

Report Date: September 30, 1986

FIT Review : Patty Cook, 9-30-86

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1 INTRODUCTION

The Levin-Richmond Terminal Corporation (LRTC) is located at 402 Wright Avenue in Richmond, California, where the firm operates a Bulk Cargo Terminal (loading and unloading of bulk cargo from large ships). From around 1947 to around 1965, several companies leased buildings at 402 Wright Avenue for the manufacture and distribution of pesticides. For reasons that will be discussed later, these earlier companies will hereafter be collectively referred to as United Heckathorn. Ecology and Environment, Inc.'s (E&E's) Field Investigation Team (FIT) was assigned by the EPA to conduct a Preliminary Assessment (PA) on LRTC facilities, due to increased public awareness (i.e., newspaper articles) of possible pesticide contamination. The FIT PA revealed that pesticide contamination of soil, groundwater, surface water, air, and canal sediments has occurred, possibly resulting from pesticide distribution activities. Analyses of on-site material have shown levels of DDT up to 400,000 ppm. The EPA subsequently requested FIT to conduct a CERCLA Site Inspection of the facility.

The purpose of this report is to summarize FIT investigative efforts and make recommendations for further action with regard to the LRTC/United Heckathorn site. The involvement of other regulatory and interested agencies is also summarized and taken into consideration. The FIT contacted several federal, state, local, and private agencies, as well as knowledgeable individuals, for information pertaining to this site.

2 SITE CHARACTERIZATION

2.1 Site History and Description

Between about 1947 and 1965, several companies leased buildings at 402 Wright Avenue and used them to manufacture and distribute pesticides (Refs. 20, 21, & 22). According to John Parr Cox and Fred Parr Cox (former owners of the site), R.J. Prentiss & Co., Inc., a New York corporation, leased the site from the United States War Assets Department on September 29, 1947. This company continues to do business under the name of Prentiss Drug and Chemical Company, Inc. (Ref. 22). Heckathorn and Co. apparently assumed the lease from R.J. Prentiss & Co., Inc. on July 1, 1948. Then, in 1956, Heckathorn and Co. merged with United Chemical Co. to form United Heckathorn Co. (Refs. 20 & 22). United Heckathorn, which is believed to have done business under the names of United Chemetrics and Chemwest, operated at this site until it filed for bankruptcy on December 15, 1965 and was evicted from the property. Chemical processing allegedly took place on-site from September 1947 to December 1965 (Ref. 4). From 1965 through the present, the site has apparently been used as a bulk cargo terminal.

The only available record of chemical processing occurring on-site was the grinding of DDT. The Montrose Chemical Corp. of California claims to have contracted with the following companies in Richmond, CA to grind its DDT: United Heckathorn Co. (1958-1960), United Chemetrics Co. (1961-1963), and Chemwest, Inc. (1963-1965) (Ref. 2). Moreover, the following is a list of companies and/or persons that may have had connection with the pesticide operations at this site (ref. 3) :

Universal Pigment and Chemical Co.
R.J. Prentiss Co.
Heckathorn and Co.
United Chemical Co.
United Heckathorn
United Heckathorn of Blythe
Chemwest Co.
Ivor Stokes

Aside from Heckathorn and related companies, it is unknown what other companies have operated on-site. It is also unknown what products and wastes, if any, were generated by the previous occupants of the site. It is alleged that the chemical processors occupying the site in the past have contributed to the existing contamination.

With respect to the Universal Pigment and Chemical Co. listed above, the CERCLIS file contains a 1951 California Department of Fish and Game memo, which describes this company as having a plant on Heckathorn Wharf on Lauritzen Canal. This company apparently produced napalm and was investigated by the Deptartment of Fish and Game, the U.S. Coast Guard, the FBI, and the U.S. Army Corps of Engineers, for alleged discharge of naphthenic acid into Lauritzen Canal (Ref. 5). However, no

record of Universal Pigment and Chemical Co. could be found at any of these sources (John Parr Cox has said Heckathorn was the napalm maker between berths A & B [Ref. 21]).

LRTC is a subsidiary of Levin Metals Corp., with headquarters in San Jose, CA. Levin Metals salvages scrap metal at sites in Richmond, Sacramento, Stockton, and San Jose. The firm also maintains a metal sales center in Santa Clara, CA, and owns subsidiary companies dealing with metals.

LRTC was formed in May, 1981 when Levin Metals acquired the property along Lauritzen Canal from the Parr Richmond Terminal Corporation. Parr Richmond Terminal Corporation acquired the property from Parr Industrial Corporation in 1961, which in turn acquired the property around 1947. From 1940 to 1947, the site is believed to have been occupied by one of the Kaiser shipyards used in the Government's wartime shipbuilding effort. Before this, dating back to 1925, Parr Richmond Terminal Corporation, founded and owned by Fred D. Parr, occupied most of Richmond harbor and may have occupied this site (there is some question as to whether Parr or the Bechtel Corporation was the first to build on and occupy the site).

The site is L-shaped and comprises about 4.5 acres, with boundaries defined by Cutting Boulevard between Fourth Street and the end of Lauritzen Canal on the north, along the Lauritzen Canal on the west, along the Santa Fe Channel on the south, along Time Oil (CAD009602343) on the east, along Wright Avenue to Fourth Street, and along Fourth Street to Cutting Boulevard (see Figure 1, Site Diagram). Currently the site is fenced and locked on all landward sides.

2.2 Process Description

Chemical processing apparently occurred on-site from 1947 to 1965, although what type is unknown. On June 15, 1960, the San Francisco Bay Regional Water Quality Control Board (RWQCB) inspected the United Heckathorn facility. All the information in this Process Description section is from the RWQCB inspection and is the only true record of the processes and chemicals used by United Heckathorn that is readily available (Ref. 14).

Operations at the plant allegedly involved chemical mixing, blending, and grinding. Raw materials were received at the main building, liquids being stored in drums or tanks outdoors, and powders stored inside the main building. A list of raw materials stored in liquid form in the yard north of the main building can be found in Table 1.0.

The facility had 11 solvent storage tanks with a total capacity of approximately 81,000 gallons, located about 75 feet north of the main building. The RWQCB inspection reported evidence of solvent leakage in this area.

Immediately south of the storage area, 10% DDT was packaged. Spilled DDT was reportedly swept up and reused. However, a considerable amount was found on the ground during the inspection.

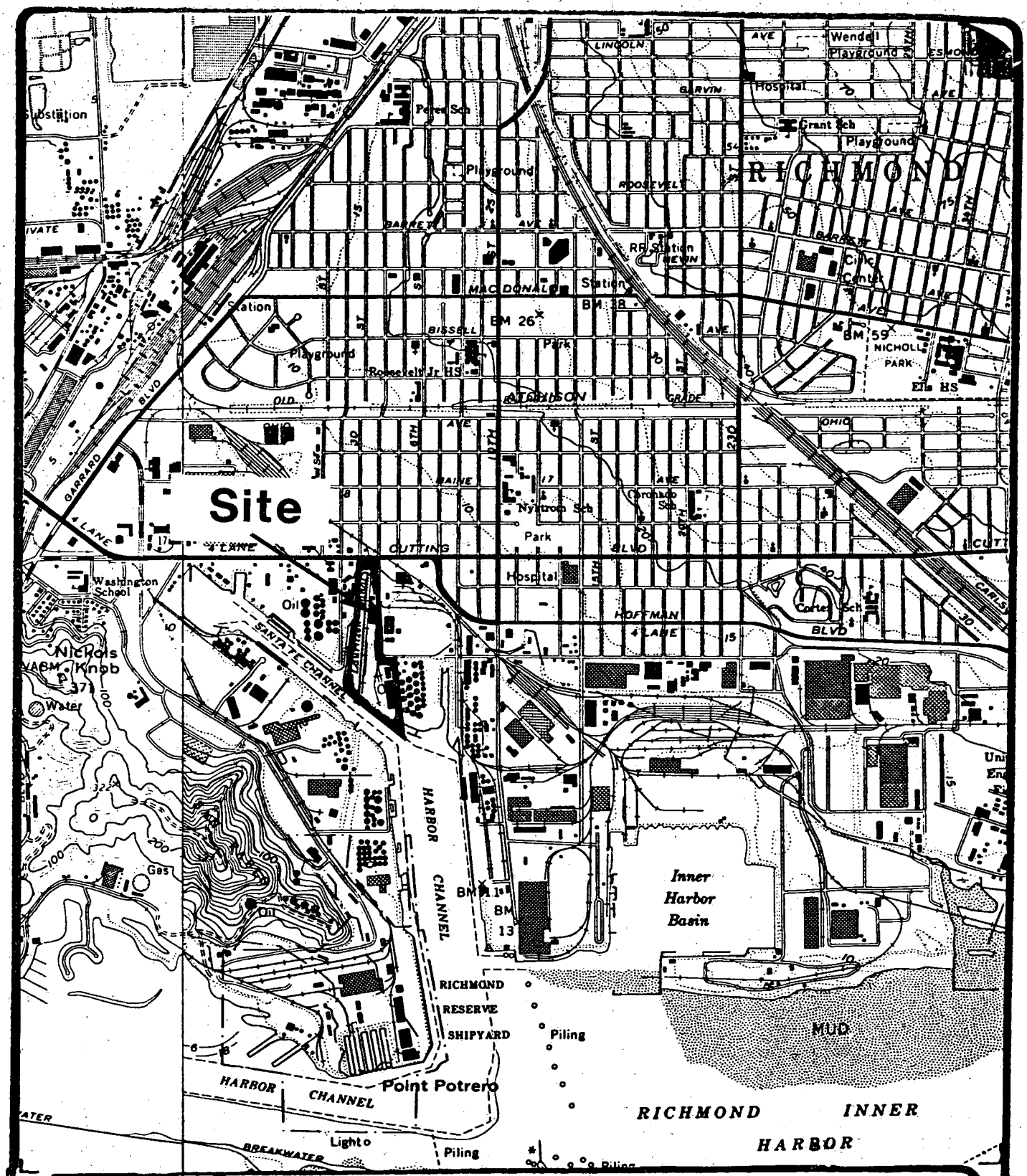

FIGURE 1
Site Location Map

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QUADRANGLE LOCATION

Levin Richmond/United Heckathorn

402 Wright Avenue
Richmond, CA 94804
Contra Costa County

SCALE 1:24000

Source: USGS "Richmond, CA" Quad.

TABLE 1.0

List of Products Found on United Heckathorn Site

Cresylic acid
Weedone brush killer-64
oil emulsion
malathion
methyl isobutyl ketone
paintbase spirits
Vidden
DDT
esteron 10-10
MCP Amine weed killer
55% Dinitro-o-sec-butylphenol
telone
Various fertilizer compounds
Muriatic acid
TEPP 40 concentrate
Dormant flowable oils
aqua ammonia
Darvel 200
Esteron 245
Weed killers of varying strengths
Dinitro weed killer
Agricultural insecticides
Esteron 99
Monsanto "Steerol"
Napco "Agrimul 10-a"
2,4,5,-T
2,4,D
Various alcohols and Ketones
silicones (anti-foaming agents)
methyl chloride
solvents
mixed xylenes (Espesol-5, Socal-170)
heavy solvents (OGA-10, petroleum solvents)
Kerosene
(Ref. 14)

Just north of the main building were several different units used in the blendings. This equipment included ribbon blenders, jacketed steam blenders, coil blenders, a barrel dryer, and a barrel filler. Through the use of dyes placed in the liquid at its source, discharges of water and waste liquids were shown to be entering the Bay.

Inside the main building, several different operations were found, including a mill and packaging unit, a steam-driven silica vacuum dryer, a water boiler, a ribbon blender, and a dry material blender.

Empty bags and drums were baled and stored between the main building and Fourth Street. These materials were then hauled to West Contra Costa Dump to be buried. Off-specification batches were also occasionally hauled to West Contra Costa Dump.

Losses of active ingredients were reported to be about one percent for dry materials and .75 percent for liquids (Ref. 14). Liquid losses were allegedly due to evaporation, while dry material losses were allegedly due to dust and adherence to containers. The plant reportedly handled about 500 tons of DDT a month and about 25 tons of other potentially toxic pesticides ("actives") a month. Monthly losses calculated from the above quantities and percentages would be 10,000 pounds of DDT and around 500 pounds of other actives. The plant manager also reported one instance in which solvent was accidently released due to an open valve (Ref. 14).

2.3 Waste Management Practices

The following discussion is a chronological, historical record of the moving, disposal, discharge, and handling of hazardous wastes at the United Heckathorn site.

The Parr Richmond Terminal Corporation apparently dredged sediments from the Lauritzen Canal during the early 1960s. The area dredged was approximately 150 feet long by 40 feet wide, off Berth B. Sediments were dredged to a depth of three feet from this area and were either removed to the Parr Canal site (CAD981436363) as fill, or dumped at a disposal site in the San Francisco Bay by a company called Olympia (Ref. 20). Recent sediment analyses and historical information on the presence of DDT in the Lauritzen Canal would suggest that the dredged sediments were probably contaminated with DDT (see dredging discussion later in this section and in the Permits section).

The two buildings used by United Heckathorn were apparently torn down in the late 1960s. No information is available on the location of the dump site used for the demolished buildings. According to John Parr Cox, after the buildings were torn down, a street sweeper cleaned up the remaining dust and debris (Ref. 21). This material more than likely contained DDT and was allegedly disposed of at the Richmond dump.

In September 1982, approximately 30 truckloads of soil, asphalt, and concrete were removed from the United Heckathorn site to the nearby Parr Canal site. Apparently, this was done

before LRTC became aware of the contamination problems. LRTC had recently bought the property and was planning on rebuilding its dock facility. The soil at the Parr Canal was subsequently tested by LRTC for DDT; concentrations ranging from two to 250 ppm were found (Ref. 15).

In January 1983, a Mr. Claus Von Wendel began work at the United Heckathorn site to clean-up and lay piling. In the course of his work he claimed to have been exposed to a white powder. Mr. Von Wendel took two samples of this material to the State's Hazardous Materials Laboratory and they were found to contain 77% and 19% DDT, respectively (ref. 12). Mr. Von Wendel also claims to have asked the engineer in charge what the white substance was and he was told that the material was harmless. Yet, he said that after working around the substance he began suffering from a chronic cough, production of sputum, vomiting episodes, a racing heart, profuse perspiration, skin rashes, and pustules (Ref. 23). Blood samples taken from Mr. Von Wendel after this exposure showed levels of DDT at five ppb (Ref. 12).

On July 22, 1983, two 55-gallon drums containing metal and wood contaminated with PCBs were disposed of by Chemical Waste Management, Inc. and two additional 55-gallon drums containing PCB capacitors were sent to be dechlorinated. According to Tom Peterson, Vice President of LRTC, the PCB material came from transformers and possibly switch gear from old equipment (Ref. 16).

During the week of July 21, 1986, LRTC began excavation for the construction of a train scale located within the United Heckathorn site. During the excavation, an odorous, oily liquid seeped from the side of the pit (See pictures in Appendix C). Analysis of this material revealed extremely high levels of DDT (400,000 ppm). High concentrations of solvents were also found in the liquid (see sample results in Appendix D). Approximately 50 cubic yards of soil were removed in September 1986, and hauled to Kettleman Hills Class I dump. Not all of the highly contaminated soil was removed from the subsurface because the material was found to have migrated beneath a large concrete block. This contaminated soil and other less contaminated areas related to the train-scale excavation will be addressed in the Remedial Action Plan, scheduled to be delivered to the offices of the DOHS and RWQCB on October 17, 1986. The area where these highly contaminated soils were found is approximately the same area where United Heckathorn's storage tanks were located. This may be the reason for the high concentrations of solvents and DDT, and may explain the purpose of the large concrete block (it may have been used as a foundation for a tank).

LRTC has had the Lauritzen Canal and Santa Fe Channel dredged. An unknown quantity of dredge spoils were removed from the Lauritzen Canal near Berth B and disposed of at the Alcatraz disposal site in 1982-3. The permit for LRTC's dredging, issued by the Army Corps of Engineers, expires in 1992 and it specifies that the total amount to be dredged in three-year intervals is 105,000 cubic yards. In December 1984, 58,170 cubic yards of

dredge spoils were removed from the Lauritzen Canal and Santa Fe Channel near Berths A and B. This material was also disposed of at Alcatraz, by a Smith-Rice Co.

Other landowners adjacent to the Lauritzen Canal and the Santa Fe Channel do maintenence dredging as well. The quantities of dredged sediments, the dates of removal, and the location of disposal, however, are unknown. The Army Corps of Engineers has a voluminous file of all dredging permits dating back to around 1935. These permits can provide dates and quantities of material dredged, in the event that it becomes necessary to locate where all dredged sediments from this area were disposed of. These sediments could have contained elevated levels of DDT.

In 1981, LRTC had an elutriate analysis (see Permits section) performed on the dredge spoils in order to obtain its permit from the Army Corps of Engineers. More elutriate analyses were done in 1983 prior to the additional dredging. These analyses, along with a bioassay study by Aqua Terra, were used as the basis for the Corps of Engineers' allowing the canal sediments, which likely contained DDT, to be removed from the canal and disposed of at a dumping ground in the San Francisco Bay. Elutriate analyses results are available in Appendix D.

2.4 Contamination Investigations

The first report of a hazardous materials incident at the United Heckathorn site occurred on August 11, 1951 when the Department of Fish and Game (DFG) reported a spill of naphthenic acid into Lauritzen Canal. This report implicated the Universal Pigment and Chemical Co. as the responsible party (Ref. 5).

On June 3, 1960, the DFG responded to an anonymous report that materials including Endrin, DDT, and Parathion were periodically being discharged into the Bay (Ref. 6). Six water samples and five dead fish samples were taken from Lauritzen Canal on June 29, 1960 by the DFG. Sample results are detailed in Appendix D. In summary, water samples were found to have concentrations of DDT ranging from 0 to 0.13 ppm. The fish samples were found to contain 10 to 24 ppm of DDT (ref. 7).

On January 9, 1965, while on skiff patrol in the Lauritzen Canal, the DFG observed a milky-white liquid flowing into the water from under the dock of ChemWest Co. Three samples of this liquid were analyzed and concentrations ranging from 140 to 430 ppm of DDT were found (ref. 8; sample results found in Appendix D).

The Department of Health Services (DOHS) under its Abandoned Site Project (ASP), inspected the United Heckathorn site on August 13, 1980. Nine soil and solid samples were taken which revealed contamination by alpha-BHC, Lindane, DDE, DDT, Mirex, Aldrin, Dinoseb, free sulphur, and heavy metals (ref. 9; see sample results in Appendix D). Additional sampling done on November 5, 1980 revealed contamination from Aldrin (35 ppm), DDE (330 ppm), DDT (8,200 ppm).

In December 1981, Harding-Lawson Associates (HLA) took borings from the sediments in the Lauritzen Canal to be analyzed for priority pollutants and to be used for elutriate analyses. The information from this sampling was to be used to gain approval for dredging the canal and having the spoils disposed of at the Alcatraz dumping ground. One sample showed a mercury concentration above the standards set by the State Water Resources Control Board (Ref. 10). However, the Army Corps of Engineers requires only that the average contaminant concentrations of all samples taken be below applicable standards. (See dredging discussion in the Permits section.)

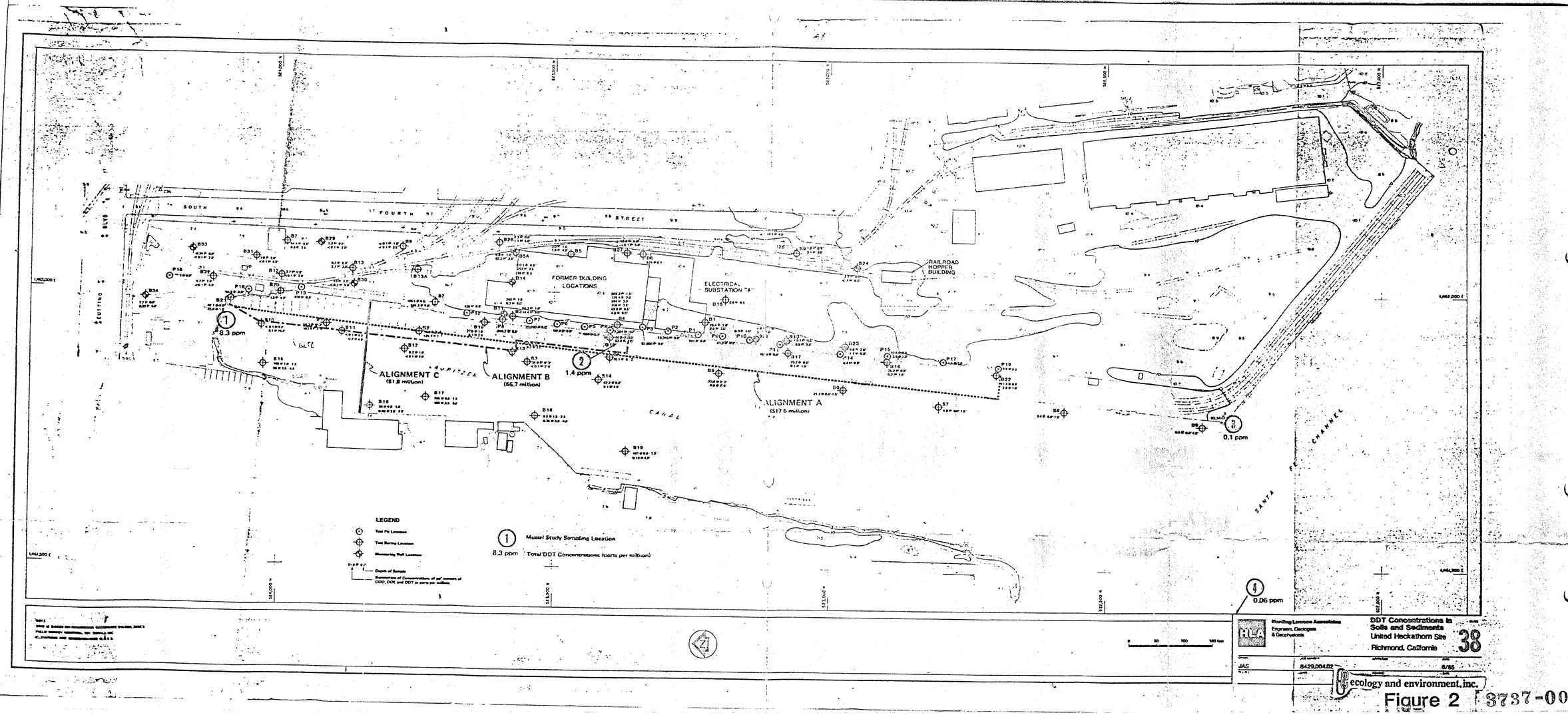
The DOHS sampled soils at the United Heckathorn site on August 31, 1982. Concentrations of DDD, DDE, DDT above background were found in the three samples taken (ref. 11; see Appendix D for sample results).

In early 1983, LRTC hired HLA to characterize on-site DDT contamination. HLA submitted its Plan of Action on February 4, 1983. Six test borings, with one being converted to a monitor well, and eight test pits were excavated on April 18 and 19, 1983, and five additional test pits were excavated on May 12, 1983. (The locations of the exploratory borings, monitor well, and test pits are presented in Plate 1 of the HLA report dated June 24, 1983, which is found in the CERCLIS file; see also Figure 2.) Extremely high levels of DDT were found on the ground surface next to the canal where the United Heckathorn building once stood. Upon receiving these preliminary results (available in Appendix D), LRTC laid gravel down and cordoned off the area around the former United Heckathorn building. The final soil and groundwater sampling results, prepared by Analytical Science Associates on July 11, 1983, can be found in Appendix D.

EAL Corp. of Richmond, CA was subcontracted by HLA to measure airborne concentrations of DDT on-site. In June, 1983, 14 particulate air samples were taken and analyzed for DDT. The results range from the detection limit of 0.002 micrograms per cubic meter to 0.1 micrograms per cubic meter (see sample results in Appendix D). In an additional study done in March 1984, 12 air samples were collected over a two-day period, with concentrations ranging from 0.00003 to 0.00138 micrograms per cubic meter. (For unknown reasons the detection limit for these samples was considerably lower than for the previous samples.) Airborne copper, lead, nickel, and zinc were also recorded during this monitoring. Upwind boundary samples showed no DDT (see sample results in Appendix D). The lower values of DDT concentrations for the sampling done in 1984 may be due to the fact that the DDT 'hotspots' were covered with crushed gravel in June 1983.

Per its Phase II Plan of Action for the Heckathorn site, HLA took one water sample and two soil samples to develop an analytical testing program for the remaining soil samples. Elevated levels of DDD, DDE, DDT, and heavy metals were found (see sample results in Appendix D).

On July 13, 1984 HLA submitted a report entitled "Preliminary Site Characterization-Former United Heckathorn Site". As mentioned previously, EAL Corp.'s air monitoring


SOUTH 11TH STREET
FOURTH STREET
FORMER BUILDING LOCATIONS
ELECTRICAL SUBSTATION "A"
RAILROAD HOPPER BUILDING
ALIGNMENT C
($1.2 million)
ALIGNMENT B
(66.7 million)
ALIGNMENT A
($17.6 million)
CANAL
SANTA FE CHANNEL
8.3 ppm
1.4 ppm
0.1 ppm
0.06 ppm
LEGEND
Test Pit Location
Test Boring Location
Monitoring Well Location
Depth of Sample
Summation of Concentrations of p,p' isomers of DDD, DDE and DDT in parts per million
Mussel Study Sampling Location
8.3 ppm Total DDT Concentrations (parts per million)
0 50 100 150 feet
Rhodhig Lorenzo Associates
Engineers, Geologists & Geophysicists
DDT Concentrations in Soils and Sediments
United Heckathorn Site
Richmond, California
38
JAS
8429.004.02
8/85
ecology and environment, inc.
Figure 2
3737-00458

investigation revealed elevated levels of DDD, DDT, DDE, copper, lead, nickel, and zinc. Priority pollutant analyses revealed elevated levels of lead in the soil at boring B11. Priority pollutant analysis on water from well B14 show elevated levels of alpha-BHC, gamma-BHC, Beta-BHC, Delta-BHC, Dieldrin, Endrin, DDD, DDT, endrin aldehyde, chlorobenzene, and trans-1,2-dichloroethane. Soil from higher elevations on the site contained levels of DDT ranging from nondetectable to 594 ppm, and lead ranging from nondetectable to 2800 ppm. Samples from the Lauritzen Canal embankment revealed DDT levels ranging from 0.1 ppm to 87,900 ppm, and lead ranging from 10 to 4000 ppm. Sediment samples from the Canal showed DDT levels ranging from nondetectable to 125.2 ppm, and lead ranging from 9.5 to 450 ppm.

The three phases of HLA's investigations and studies show that chlorinated pesticides, heavy metals, and volatile organic compounds are present at the site. The contaminant of concern is DDT, which is found in elevated concentrations in the upland soils, embankment soils, groundwater, and canal sediments.

2.5 Permits

LRTC has a permit from the Army Corps of Engineers which enables it to dredge in the Lauritzen Canal and Santa Fe Channel. The permit (No. 14475E53, modified by 14475E43A) is a 10-year permit and expires on October 19, 1992. The permit is contingent on two special conditions, that the dredge material from the Santa Fe Channnel and the Lauritzen Canal be disposed of in a certain manner at San Francisco Disposal Site No. 11 (Alcatraz Island), and that LRTC conduct elutriate analyses of the sediments to be dredged. If the samples show concentrations of pollutants in excess of allowable standards, additional testing must be done. However, no levels have been found above these standards (ref. 13).

Elutriate analyses are done by taking sediment from the area that is to be dredged and mixing it with water from the area where the dredge material will be disposed of. This mixture is then agitated to form a homogenous solution. The liquid is then analyzed, with the results of all samples being averaged together; these figures are then compared with standards set by the State Water Resources Control Board. DDT, however, is not water-soluble, and because it is unlikely to be extracted from the sediments, it will not show up in elutriate analyses. This may not mean that DDT is not available for uptake by biota from the sediments.

A conditional-use permit for the use of the land was granted to the previous owner (Parr Richmond Terminal Corp.) in 1965 by the City of Richmond.

2.6 Remedial Action

No significant remedial activities have occurred at the United Heckathorn site to date. In May 1983, surface areas that were found to contain high levels of DDT were cordoned off and covered with a minimum of six inches of crushed rock to minimize airborne release of DDT. There is currently a Remedial Action Plan being revised which is scheduled to be submitted to the DOHS and RWQCB by October 17, 1986.

During the week of August 25, 1986 HLA removed approximately 50 cubic yards of highly contaminated soil found during excavating for a train scale. Analysis of this material showed concentrations of DDT at 400,000 ppm and xylene at 12,000 ppm. The sample results, which also showed other chemicals found in high concentrations, can be found in Appendix D. As of September 23, 1986, five containers (approximately 50 cubic yards) of this material had been excavated from the pit and hauled to Kettleman Hills Class I dump.

3 ENVIRONMENTAL SETTING

3.1 Surrounding Area

The industrial area found along Richmond inner harbor surrounds this site on the south, west, and east. The residential area of Richmond begins about one block north of the site. The population of Richmond is approximately 78,606 (Ref. 24).

The Santa Fe Channel and the Lauritzen Canal of the San Francisco Bay extend to the site; these are located at the north end of the Harbor Channel. According to Mike Rugg of the DFG, there are no known environmental receptors (e.g. wetlands, critical habitats, endangered species, nature preserves, etc.) near the United Heckathorn site (Ref. 18).

The one-year, 24-hour rainfall for the Richmond area is approximately three inches (Ref. 25). Net precipitation from November to April is 6.85 inches (Ref. 26).

3.2 Geology

The site is underlain with thick deposits of Bay mud. There is between four and eight feet of fill on top of the Bay mud. This fill is heterogenous and is probably from the hills to the west. The permeability of the fill was found to be 0.0001 centimeters per second (cm/sec). The permeability of the Bay mud was found to be approximately 0.000007 cm/sec (Ref. 15). According to the California Department of Mines and Geology Preliminary Report 19, there appears to be between 300 and 500 feet of alluvial deposits under the Bay mud (Ref. 16). All surface runoff flows directly into the Canal.

3.3 Hydrology

3.3.1 Surface Water

The San Francisco Bay extends up to this site as the Santa Fe Channel and Lauritzen Canal (See Map). San Francisco Bay is used for boating, swimming, fishing, aesthetic enjoyment, etc.

3.3.2 Groundwater

According to well logs provided in HLA's report, the site is overlain with artificial fills varying in depth from four to eight feet. Groundwater is found in the fill in some areas on-site. The presence of groundwater in the fill appears to be attributable to Bay water intrusion and rainfall percolation. The Bay mud underlying the site is saturated with brackish water (Ref. 15).

Contaminant migration through the Bay mud is unlikely due to this layer's thickness and very low permeability. According to available sources, the groundwater within three miles of the site is not used for any domestic or irrigation purposes (Ref. 19). There are between 20 and 30 wells within three miles of the site. The Department of Water Resources has them all recorded as non-water-producing cathodic protection wells (Ref. 19). Contra Costa County Environmental Health Department records do not show any water systems dependent on groundwater in the Richmond area.

HLA found the seepage rate from the saturated subsurface soils into the Lauritzen Canal to be 390 gallons per day (Ref. 15).

4 SUMMARY OF FIT INVESTIGATIVE EFFORTS

On August 14, 1986, FIT investigators Doug Russell and Mike Grant inspected the Levin-Richmond Terminal Corporation site. The site inspection began with a meeting, followed by a tour of the site and the areas that have DDT contamination. Present at the meeting were:

-Thomas Peterson, Vice president and General Manager, LRTC
-Mike McCoy, Marketing Representative, LRTC
-Jim Cannon, Design Engineer, LRTC
-Stephen Peck, Attorney for LRTC
-Keith Howard, Attorney for LRTC
-William Frizzell, Associate Engineer, HLA
-Douglas Russell, Ecology and Environment, Inc.
-Mike Grant, Ecology and Environment, Inc.

Following the meeting, William Frizzell escorted Mike Grant and Doug Russell through the facility along the Lauritzen Canal. Photographs were taken and are available in Appendix C. The points of interest as seen in the photos are outlined below: the embankment where high DDT concentrations were discovered and crushed gravel was placed as temporary cover; the stockpile of hazardous waste contained on-site; and the excavation for the train scale where high concentrations of pesticides and solvents were found in the subsurface soils.

FIT also contacted several agencies and knowledgeable persons to gain an understanding of this site's complex history and contamination problems. Considerable research was done by FIT at the EPA library, the office of a LRTC lawyer, the DOHS, the RWQCB, the DFG, and the Contra Costa County Health Department, among others.

In addition, FIT attended a meeting on the proposed Remedial Action Plan on the Lauritzen Canal sediments to observe the current strategies of all agencies, contractors, and persons involved. The meeting took place at the DOHS on September 23, 1986, and representatives from HLA, DFG, RWQCB, DOHS, and Contra Costa County Health Department were present. In summary, HLA outlined LRTC's position of not having the funds to do the remedial work that will be proposed in the RAP. LRTC will continue to submit the RAP until it is approved by the DOHS and the RWQCB; its object is to use this document as a means of recovering funds for the remedial work at this site as well as at the adjacent Parr Canal site, which LRTC also owns. (LRTC has sued Parr Richmond Terminal Corporation for knowingly selling a contaminated parcel, and hopes to force Parr Richmond to pay for all costs associated with the cleanup.)

The remedial alternatives proposed by HLA for the DDT contaminated sediments consisted of constructing a retaining wall behind which all canal sediments will be disposed of. Approximately 35,000 cubic yards of canal sediments are proposed to be removed to bring the DDT concentration in the canal sediments down to less than one ppm. The details of construction of the retaining wall and of the subsequent containment of the contaminated sediments were unavailable. Three different alignments were proposed (see Figure 2), of which alignment C was

favored because of the costs and feasibility. The costs of alignment C are estimated to be around 2.6 million dollars, whereas the costs of land disposal at a Class I dump site are estimated to be around 10 million dollars.

5 HRS FACTORS

The following HRS factors, used to rank uncontrolled hazardous waste sites according to Uncontrolled Hazardous Waste Site Ranking System, A User's Manual, are applied to the LRTC/United Heckathorn site.

o Observed Release:

Observed releases to air were documented during two air sampling events. DDT, DDE, DDD, nickel, lead, zinc, and copper were found downwind at concentrations above those upwind.

Samples of groundwater taken from the site have shown elevated levels of BHC compounds, dieldrin, endrin, DDT and its metabolites, endrin aldehyde, chlorobenzene, trans-1,2-dichloroethane, and heavy metals.

The Lauritzen Canal has been the focus of various contamination investigations since 1951. The contaminants that have been found in the canal throughout the years are: naphthenic acid, endrin, parathion, and DDT.

Fish and mollusk samples taken from the Lauritzen Canal have shown concentrations of DDT above those of background samples taken from other parts of the Bay.

Analyses of canal sediments have shown elevated concentrations of heavy metals and DDT. The canal sediments do not constitute an observed release according to the current HRS model, but they are still of concern due to the potential bioavailability and subsequent entrainment into the food chain.

o Direct Contact/Fire and Explosion:

There is no known threat of fire or explosion at this site. The potential exists for direct contact to occur due to elevated levels of DDT being found on the surface soils on-site (However, areas with extremely high concentrations of DDT have been covered with a minimum of six inches of crushed rock). Documented employee exposure to DDT has occurred as recently as 1983. The landward side of the site is fenced and locked.

The contaminants found in the Lauritzen Canal sediments have the potential for concern. Fish and mollusk tissues have elevated levels of DDT. The area is frequently used for fishing, and there are no warning signs currently posted. The sediments are also displaced by currents, tidal action, and dredging. The dredge material has historically been disposed of at various areas around the Bay. This has, in effect, resulted in the distribution of DDT throughout the Bay.

o Waste Type:

The types of waste found on-site are DDT, DDE, DDD, BHC compounds, dieldrin, endrin, endrin aldehyde, chlorobenzene, trans-1,2-dichloroethane, heavy metals, naphthenic acid, and parathion.

o Waste Quantity:

There is no information on the quantity of hazardous wastes found on-site. The RWQCB inspection of United Heckathorn in 1960 recorded that reported monthly losses of DDT due to adherence to containers and dust were around 10,000 pounds. United Heckathorn ground DDT for Montrose for seven years. A worst-case analysis indicates that approximately 720,000 pounds of DDT may have been released over the seven years. United Heckathorn also handled approximately 25 tons of other actives a month. Worst-case analysis of this indicates approximately 500 pounds of these actives may have been released a month. It is unknown when these actives were handled, although chemical processing apparently took place continuously from 1947 through 1965.

o Groundwater:

According to well logs provided in HLA's report, the site is overlain with artificial fills varying in depth from four to eight feet. Water is found in the fill in some areas on-site. The presence of water in the fill appears to be attributable to Bay water intrusion and rainfall percolation. The underlying Bay mud is saturated with brackish water (Ref. 15).

Contaminant migration to lower aquifers is unlikely due to the presence of relatively thick deposits of Bay mud. The groundwater within three miles of the site is not used for any domestic or irrigation purposes, although there are between 20 and 30 wells within this radius which the Department of Water Resources considers cathodic protection wells (Ref. 19). Contra Costa County Environmental Health Department records do not show any small water systems dependent on groundwater in the Richmond area.

HLA found the seepage rate from the saturated subsurface soils into the Lauritzen Canal to be 390 gallons per day (Ref. 15).

o Surface Water:

The San Francisco Bay extends up to this site via the Santa Fe Channel and Lauritzen Canal (See Figure 1). San Francisco Bay is used for boating, swimming, fishing, aesthetic enjoyment, etc.

o Air Route:

The prevailing wind is generally from the west or northwest (Ref. 28). Industrial and residential areas surround this site on the west, north, and east sides.

6 OTHER AGENCY INVOLVEMENT

The involvement of responsible agencies is outlined below:

o The RWQCB has been actively concerned about contamination of groundwater, surface water, and canal sediments at the site. The board drafted two Cleanup and Abatement Orders in 1984 (Nos. 84-001 & 84-008). These orders were drafted to set deadlines for the submittal of proposals and initiation of remedial work to be done, but neither deadline was observed by LRTC. The RWQCB has consequently established new deadlines for LRTC for submission of the interim and revised draft RAPs to the RWQCB; the interim RAP deadline is October 1, 1986, and the revised RAP deadline is October 15, 1986. LRTC and HLA have subsequently said that the interim RAP will be included in the revised RAP and they both will be submitted on October 17, 1986, apparently in violation of the RWQCB's request. After it receives the RAP, the RWQCB will conduct a public hearing on it within a couple of weeks. The site is being treated as high priority at the RWQCB; Robin Breuer is the project leader.

o The DOHS has also been active at the Heckathorn site. The site is on the State's Superfund list with a score of 12.63, due to observed releases to the groundwater and surface water. No State Superfund work has been done to date. The DOHS's concerns are mainly with contaminated soil and public exposure to airborne contaminants. DOHS drafted a Survey and Compliance Order because LRTC was in violation with respect to adequacy and timeliness of its contamination characterization. This order is no longer in effect. The DOHS has also set deadlines for the RAP, which have not been met. The DOHS is also planning to conduct a public hearing within a month after it receives the RAP. Claudia Willen is currently the project leader for the DOHS.

o The California Department of Fish and Game has been involved with problems at the Heckathorn site since the early 1950s. It has been concerned primarily with contamination of San Francisco Bay. DFG has also taken several fish and mollusk samples which have shown elevated levels of DDT. Mike Rugg is the DFG project leader.

o The Contra Costa County Environmental Health Department has been attempting to keep tabs on this site by active communication (attending meetings, reviewing files, etc.) with the DOHS, the RWQCB, and the DFG. The objective of this County agency is to get the site delisted from the State's Superfund list.

7 CONCLUSIONS

This site has been contaminated since at least 1950. There have been documented releases to the soil, groundwater, surface water, canal sediments, aquatic wildlife, and the air. There have also been movements, both documented and speculated, of contaminated materials to local dumps, nearby properties, and to the San Francisco Bay.

Shipyards and scrap metal operations not associated with the LRTC site have likely contributed to the heavy metal contamination problems found throughout the Richmond harbor area.

United Heckathorn, and related companies, are the apparent source of the pesticide contamination.

The potential exists for DDT to be found in nearby off-site areas due to: the extensive losses reported during the years of distribution; the several instances of soil and sediment transport by humans; the high concentrations found on-site; and evidence of DDT in almost all samples taken throughout the site.

The DDT may not be extracted from the canal sediments unless exposed to a solvent or fatty-acid-type substance. The chances for an oil spill or acid spill occurring are remote, but in the event of this happening, the DDT would be extracted from the sediments and become mobile in the Bay waters.

8 RECOMMENDATIONS

FIT makes the following recommendations for the LRTC/United Heckathorn site with respect to CERCLA:

1) Recommendations for immediate action:

- This site should be scored for inclusion on the NPL. Due to the observed releases to the air, surface water, and groundwater, this site should achieve a score greater than 28.5 on the Hazard Ranking System. FIT will initiate scoring at the EPA's request.

- Signs should be posted on the seaward side of the site warning the public of the potential dangers due to the DDT and heavy metal contaminations. These should warn of all pathways of potential exposure and should remain posted until the threat is well understood or until the material has been moved. All dredging in the Lauritzen Canal, Santa Fe Channel, Harbor Channel, and Parr Canal should be halted until accurate conclusions can be made on the effect of the contamination on the public and on the environment (see below regarding harbor area evaluation). EPA's Technical Assistance Team (TAT) should be directed to determine the need of these immediate remedial measures both at the site and throughout the Richmond inner harbor area (due to the potential existence of contaminated sediments and soils in this area).

2) Recommendations for future site characterization and assessment of other potentially contaminated areas:

- The site should be further characterized to find the areal extent and degree of all subsurface contamination. There is the possibility that other areas on-site are as contaminated as the material found during the train-scale excavation.

- Air should be monitored to ascertain whether there is a threat to employees and residents in the area. OSHA should be notified as to the history of, and present potential for, employee exposure to DDT.

- Off-site areas should be sampled to determine the extent of contamination from DDT and related compounds. Nearby residential areas may have traces of DDT which have been dispersed by wind or by people.

- Sampling should be done after the first heavy rain to determine the extent of DDT in runoff.

- An attempt should be made to determine the quality and quantity of potentially contaminated water migrating from within the fill to the adjacent Bay waters.

- The location of the Contra Costa County dump should be identified; this dump has received potentially hazardous material from the United Heckathorn site.

- The Richmond dump may have received the material that was allegedly picked up by a street sweeper after the United Heckathorn buildings were torn down. This material was probably contaminated with DDT. These dumps should be assessed under CERCLA, under low priority.

* * *

If the potential responsible party is not willing or able to implement the above mentioned recommendations, then FIT will proceed to do so under the EPA's request.

- Finally, the effects of the DDT-contaminated sediments disposed of in San Francisco Bay should be assessed. The RWQCB has proposed a Cleanup and Abatement Study to determine the effects and sources of the contaminants found in the Richmond inner harbor area. The EPA and/or FIT should provide assistance to the RWQCB, if necessary, in conducting and researching the study. This study may shed light on the localized effects of DDT, but serious consideration should be given by the EPA and its contractors to a study of regional effects resulting from contamination at disposal sites in San Francisco Bay.

9 REFERENCES

1-Contact report from meeting on proposed remedial action plan on contaminated canal sediments, Doug Russell, FIT, September 23, 1986.

2-Letter from John L. Kallok, Montrose Chemical Corporation of California, to Beth Jines, DOHS. December 2, 1981.

3-Moore, Clifford, Wolfe, Larson, & Trutner, Attorneys at Law, Attachment A, Request for file review to the Department of Fish and Game.

4-Moore, Clifford, Wolfe, Larson, & Trutner, Attorneys at Law, Joint Pretrial Statement of All Parties, U.S. District Court for the Northern District, No. C 85 4776 SC, January 28, 1986.

5-Department of Fish and Game, Inter-Departmental Communication to John Harrison, RWQCB, January 23, 1952.

6-Department of Fish and Game, Pollution Complaint from Robert Jones, DFG to Ellis Berry, DFG, June 3, 1960.

7-Department of Fish and Game, Inter-Departmental Communication, Fred Kemp to H. E. Pintler, DFG, August 11, 1960.

8-Department of Fish and Game Memo from Fred Kemp, DFG to Donald Lollock, DFG, January 18, 1965.

9-Abandoned Site Project Site Inspection, August 13,1980.

10-EAL Corporation, Analysis Report for Harding-Lawson Associates, December 7, 1981.

11-Department of Health Services, Hazardous Waste Site Surveillance and Compliance Report, August 31, 1982.

12-Department of Health Services, Memorandum from Richard J. Jackson to Carles White, October 17, 1983.

13-Department of the Army, San Francisco District, Corps of Engineers, Notice of Authorization, November 12, 1982 and Permit, January 26, 1982.

14-State of California Regional Water Pollution Control Board #2, Checking Program Report, June 15, 1960.

15-Harding-Lawson Associates Site Characterization and Remedial Action Plan, Former United Heckathorn Site, Richmond, California, February 26, 1986.

16-Contact log between Doug Russell, FIT, and Tom Peterson, LRTC, September 18, 1986.

17-Contact report from Doug Russell, FIT and Bill Frizzell, Harding-Lawson Associates.

18-Contact Report between Doug Russell, FIT and Mike Rugg, Department of Fish and Game, September 2, 1986.

19-Contact Report between Doug Russell, FIT and Betty Swatsenburg, DWR, September 12, 1986.

20-Cox, John Parr, January 22 and 23, 1985, Deposition taken by the law firm of Moore, Clifford, Wolfe, Larson, and Trutner in the case of Levin Metals Corporation, et. al., vs. Parr-Richmond Terminal Company, a dissolved corporation, et. al., and related Counterclaims.

21-Cox, John Parr, July 3, 1986, Deposition taken by the law firm of Moore, Clifford, Wolfe, Larson, and Trutner in the case of Levin Metals Corporation, et. al., vs. Parr-Richmond Terminal Company, a dissolved corporation, et. al., and related Counterclaims.

22-Cox, Fred Parr, Jr., July 9 and 10, 1986, Deposition taken by the law firm of Moore, Clifford, Wolfe, Larson, and Trutner in the case of Levin Metals Corporation, et. al., vs. Parr-Richmond Terminal Company, a dissolved corporation, and Parr Industrial Corporation, a dissolved corporation, and Does One to Three Hundred, Inclusive.

23-Department of Health Services, Memorandum from Richard J. Jackson to Dick Burgard, September 26, 1983.

24-Contact log between Doug Russell, FIT, and Richmond Planning Department, September 2, 1986.

25-United States Department of Commerce, Rainfall Frequency Atlas of the United States, Technical Paper No. 40, May 1961.

26-United States Department of Commerce, Climatic Atlas of the United States, June 1968.

27-Contact log between Doug Russell, FIT, and Ken Axe, Contra Costa County Health Department, September 12, 1986.

28-Contact log between Doug Russell, FIT, and Dario Lavagie, Bay Area Air Quality Management District, September 12, 1986.

APPENDIX A

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
LRTC / United Hechathorn	402 Wright Ave

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Richmond	CA	94804	Contra Costa		

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
___ ___ ___.__	___ ___ ___.__	[X] A. PRIVATE [ ] B. FEDERAL _____ [ ] C. STATE [ ] D. COUNTY [ ] E. MUNICIPAL [ ] F. OTHER _____ [ ] G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
8 / 14 / 86 (MONTH DAY YEAR)	[X] ACTIVE [X] INACTIVE	1947 (BEGINNING YEAR) / 1965 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

[ ] A. EPA [X] B. EPA CONTRACTOR _____ (Name of firm) [ ] C. MUNICIPAL [ ] D. MUNICIPAL CONTRACTOR _____ (Name of firm)
[ ] E. STATE [ ] F. STATE CONTRACTOR _____ (Name of firm) [ ] G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Doug Russell	Env. Scientist	E+E	(415) 777-2811
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Mike Grant	Env. Scientist	E+E	(415) 777-2811
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
			( )
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
[ ] PERMISSION [ ] WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
		( )

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
				/ / (MONTH DAY YEAR)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [X] B. POWDER, FINES
- [X] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS: 2
CUBIC YARDS: 2
NO. OF DRUMS: 0

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

Unknown

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	DDT				
	Solvents		in soils, etc.		
	Heavy metals				
	Pesticides				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [X] OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION
Pesticides + heavy metals

01 [X] B. SURFACE WATER CONTAMINATION — 02 [X] OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ?
04 NARRATIVE DESCRIPTION
Pesticides (DDT)

01 [X] C. CONTAMINATION OF AIR — 02 [X] OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ?
04 NARRATIVE DESCRIPTION
DDT and heavy metals

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED:
04 NARRATIVE DESCRIPTION

01 [X] E. DIRECT CONTACT — 02 [X] OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ?
04 NARRATIVE DESCRIPTION
Contaminated fish and Mollusks being eaten

01 [X] F. CONTAMINATION OF SOIL — 02 [X] OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: 3? (Acres)
04 NARRATIVE DESCRIPTION
DDT in high concentrations in soil

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED:
04 NARRATIVE DESCRIPTION

01 [X] H. WORKER EXPOSURE/INJURY — 02 [X] OBSERVED (DATE: 1983) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 71
04 NARRATIVE DESCRIPTION
worker exposed to 77% DDT

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED:
04 NARRATIVE DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ K. DAMAGE TO FAUNA — 02 ☒ OBSERVED (DATE: 1960) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
Fish kills reported in 1960

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☒ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
DDT accumulation in fish + Mollusks

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
(Spills/Runoff/Standing liquids, Leaking drums)
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
DDT in soils and sediments have potential for migration into Bay

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Unknown

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Movement of DDT contaminated soil to nearby Parr Canal site

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER _____ (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER _____ (Specify)

05 OTHER

- ☐ A. BUILDINGS ON SITE

06 AREA OF SITE

_____ (Acres)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☒ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☒ NO

02 COMMENTS

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY *(Check as applicable)*

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. _____ (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY *(Check one)*

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING *(Other sources available)* COMMERCIAL, INDUSTRIAL, IRRIGATION *(No other water sources available)* ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION *(Limited other sources available)* ☒ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER _____

03 DISTANCE TO NEAREST DRINKING WATER WELL _____ (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
_____ (ft)	_____	_____ (ft)	_____ (gpd)	☐ YES ☐ NO

09 DESCRIPTION OF WELLS *(Including useage, depth, and location relative to population and buildings)*

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES ☐ NO	COMMENTS	☐ YES ☐ NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE *(Check one)*

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
San Francisco Bay	X	at site (mi)
	☐	_____ (mi)
	☐	_____ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. _____ NO. OF PERSONS	B. _____ NO. OF PERSONS	C. ~78,000 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

< 1 Mile (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

7

04 DISTANCE TO NEAREST OFF-SITE BUILDING

< 0.1 (mi)

05 POPULATION WITHIN VICINITY OF SITE *(Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)*

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☒ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
_____ (ft)	_____ (ft)	_____	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
6.85 (in)	3 (in)	_____ %		_____ %

09 FLOOD POTENTIAL	10
SITE IS IN _____ YEAR FLOODPLAIN	☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)		12 DISTANCE TO CRITICAL HABITAT (of endangered species)
ESTUARINE	OTHER	_____ (mi)
A. _____ (mi)	B. _____ (mi)	ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS	
		PRIME AG LAND	AG LAND
A. < 1 (mi)	B. < 1 (mi)	C. _____ (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____ *(Name of organization or individual)*

03 MAPS
☐ YES
☐ NO

04 LOCATION OF MAPS _____

V. OTHER FIELD DATA COLLECTED *(Provide narrative description)*

VI. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. CURRENT OWNER(S)

Field	Value
01 NAME	Levin Rich. Term. Corp
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	402 Wright Ave
04 SIC CODE	
05 CITY	Richmond
06 STATE	CA
07 ZIP CODE	94804

Field	Value
01 NAME	
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE	
05 CITY	
06 STATE	
07 ZIP CODE	

Field	Value
01 NAME	
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE	
05 CITY	
06 STATE	
07 ZIP CODE	

Field	Value
01 NAME	
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE	
05 CITY	
06 STATE	
07 ZIP CODE	

PARENT COMPANY (If applicable)

Field	Value
08 NAME	Levin Metals
09 D+B NUMBER	
10 STREET ADDRESS (P.O. Box, RFD #, etc.)	1310 Canal St
11 SIC CODE	
12 CITY	Richmond
13 STATE	CA
14 ZIP CODE	94804

Field	Value
08 NAME	
09 D+B NUMBER	
10 STREET ADDRESS (P.O. Box, RFD #, etc.)	
11 SIC CODE	
12 CITY	
13 STATE	
14 ZIP CODE	

Field	Value
08 NAME	
09 D+B NUMBER	
10 STREET ADDRESS (P.O. Box, RFD #, etc.)	
11 SIC CODE	
12 CITY	
13 STATE	
14 ZIP CODE	

Field	Value
08 NAME	
09 D+B NUMBER	
10 STREET ADDRESS (P.O. Box, RFD #, etc.)	
11 SIC CODE	
12 CITY	
13 STATE	
14 ZIP CODE	

III. PREVIOUS OWNER(S) (List most recent first)

Field	Value
01 NAME	Parr Rich. Term. Corp.
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	402 Wright Ave
04 SIC CODE	
05 CITY	Richmond
06 STATE	CA
07 ZIP CODE	94804

Field	Value
01 NAME	
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE	
05 CITY	
06 STATE	
07 ZIP CODE	

Field	Value
01 NAME	
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE	
05 CITY	
06 STATE	
07 ZIP CODE	

IV. REALTY OWNER(S) (If applicable; list most recent first)

Field	Value
01 NAME	
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE	
05 CITY	
06 STATE	
07 ZIP CODE	

Field	Value
01 NAME	
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE	
05 CITY	
06 STATE	
07 ZIP CODE	

Field	Value
01 NAME	
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	
04 SIC CODE	
05 CITY	
06 STATE	
07 ZIP CODE	

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. CURRENT OPERATOR *(Provide if different from owner)*

01 NAME	02 D+B NUMBER

03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY *(If applicable)*

10 NAME	11 D+B NUMBER

12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) *(List most recent first; provide only if different from owner)*

01 NAME	02 D+B NUMBER

03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

06 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES *(If applicable)*

10 NAME	11 D+B NUMBER

12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☒ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☒ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

APPENDIX B

PA/SI CONTACT LOG

Facility Name: Levin-Richmond Term. Corp.
Facility ID: CAD 980673560

Name	Affiliation	Phone #	Date	Information
Robin Breuer	RWQCB	464-4223	7/10/86	I'll call before coming to review the files and fol ers.
Claudia Willen	DOHS	372-4416	7/10/86	There is an exte sive file. Also, couple of lawsuit pending. I will call to set up a meeting to review the file.
Dan Bergman	Contra Costa County Env. Health	372-4416	7/10/86	He has a file and chronological update on the 16 State Superfund sites. Refer to Ken Axe.
Mike Rugg	Dept. Fish and Game	707-944-2011	7/10/86	Involvement as review. Have fir file on United Heckatorn. File copied.
	Dept. Fish and Game	707-944-2011	7/15/86	File copied.
	Contra Costa Env. Health	372-4416	7/15/86	File copied.

PRELIMINARY ASSESSMENT CONTACT LOG

Facility Name: Levin-Richmond Term. Corp.
Facility ID: CAD 980673560

Name	Affiliation	Phone #	Date	Information
unknown	F.B.I.	553-7400	7/29/86	F.B.I. files are confidential to almost everyone. I should send a letter on EPA letterhead with my requests to: Legal Section, F.B.I., 450 Golden Gate Avenue, S.F., CA 94102
Terry Rogers	U.S. Coast Guard	437-3087	7/29/86	No file informatio is likely before 1980. He will loo into it and return my call.
unknown	U.S. Army Corps of engineers	974-0443	7/29/86	Try Regulatory People who keep records on permit activity for dredging. Also try- Trudy Reilly at 21 Main St., 9th Flr.
Terry Rogers	U.S. Coast Guard	437-3087	7/31/86	There have been t oil spill incident in Lauritzen Canal since 1980. No records are kept before this. Oil spill report will be sent.
Rich Davidson	Richmond Public Works Dept.	620-6536	7/31/86	His dept. has nothing. I should try Building Dept. and/or Planning Dept. (Nancy Kaufman or Tricia Murphy).

PRELIMINARY ASSESSMENT CONTACT LOG

Facility Name: Levin-Richmond Term. Corp.
Facility ID: CAD 980673560

Name	Affiliation	Phone #	Date	Information
	Planning Dept.	620-6706	9/02/86	Population of Richmond 78,606. Brian Cook is census person and may have more info. on smaller areas.
?	LRTC	232-4422	9/02/86	Two or three drums of waste oil and solvents were found on-site and disposed of off-site. This oil was resultant from heavy equipment and wash parts oil draining
Dario LaVagie	Air Quality Control Board	771-6000	9/12/86	Prevailing wind is generally from the west or northwest. They have air monitoring stations in Richmond at 1065 - 7th and 1144 -13th. They do not analyze for DDT, but might upon request.
Ken Axe	Contra Costa Country Health Department	372-2521	9/12/86	No small water systems in West County. Possibly, families put wells in during drought and have since been abandoned.
Betty Swatsenbarg	DWR	916-322-7171	9/12/86	Richmond inner harbor has 20-30 well logs going three miles. They are cathodic protection wells.

CONTACT REPORT

AGENCY: Department of Fish and Game

ADDRESS:

PERSON CONTACTED: Mike Rugg

PHONE NO.: 707-944-2011

FROM: Doug Russell

TO: File

DATE: 9/2/86

SUBJECT: Levin-Richmond Parr Canal

CC:

The fish samples analysis revealed DDT concentrations in all fillets, below FDA action levels, whole body fish samples were the highest levels in the State. He is sending the results to me.

There are no wetlands, critical habitats, endangered species, or nature reserves near the Santa Fe Channel Area.

CONTACT REPORT

AGENCY: LRTC

ADDRESS: 402 Wright Avenue

PERSON CONTACTED: Tom Peterson, Vice-President and General Manager

PHONE NO.: 232-4422

FROM: Doug Russell

TO: File

DATE: 9/18/86

SUBJECT: Containers of PCB material and dredge info.

CC:

The PCB drums contained, to the best of his recollection, "PCB transformers and possibly switch gear from old equipment (cranes, etc.) that were on-site".

Dredging has occurred twice since 1981, once along Berth A and once along Berth B and some of A. Mike McCoy will look into the dates and quantities and return my call. He also should have info. on who did the dredging and where it was taken.

CONTACT REPORT

AGENCIES:	HLA, RWQCB, DOHS, DFG, Contra Costa County
ADDRESS:	Shellmound Avenue, Emeryville
PERSON CONTACTED:	Bill Frizzel, HLA
PHONE NO.:	892-0821
FROM:	Doug Russell, FIT
TO:	File
DATE:	9/23/86
SUBJECT:	LRTC's position on RAP and funding.
CC:	

HLA held a technical meeting at the DOHS to discuss, the status of the RAP, the RAP alternatives for the canal sediments, the status of the train scale pit interim remedial measures, and the schedule of submittals for the RAP. Bill Frizzel began the meeting by stating that LRTC will provide funding for submitting the RAP until it is approved, but LRTC will not be able to fund the actual work.

The proposals for the canal sediments were discussed next. A map was provided which showed the three alternative alignments for a retaining wall that the sediments will to be placed behind. Alignment C was preferred because it was the most financially feasible. The cost of land disposal at a Class I dump was estimated to be around 10 million dollars, whereas alignment C was estimated to cost around 2.6 million. The train-scale excavation will be addressed in the Final RAP, which should be submitted by November 1, 1986.

CONTACT REPORT

AGENCY: RWQCB

ADDRESS: 1111 Jackson St., Oakland

PERSON CONTACTED: Robin Breuer

PHONE NO.: 464-4223

FROM: Doug Russell

TO: File

DATE: 10/2/86

SUBJECT: Parr Canal sediments, C & A Orders, Aqua Terra study.

CC:

The Parr Canal sediments will not be addressed unless remediated at the time Lauritzen Canal sediments are remediated. PCB's in soil are DOHS concern. Heavy metals in sediments are not of concern. DDT in sediments are in low levels compared to Lauritzen Canal, and are not feasible to clean-up as a single project.

The Aqua Terra biological study is not being used as the basis for anything; it is bogus.

The two Clean-up and Abatement Orders were violated due to: reports not submitted on-time, site characterization was incomplete, and reports were insufficient.

APPENDIX C

LRTC/United Heckathorn

The following photographs were taken by Mike Grant on August 14, 1986 at approximately 10:30am. The weather was sunny and warm.

View to the south of LRTC Bulk Cargo Yard at Berth A is the green ship w/green towers; Berth B is behind pile of bulk material on right.

View to the northeast of covered pile of DDT contaminated soil.

View to the north along Lauritzen Canal, United Heckathorn Building was on right. Gravel on embankment was placed to cover DDT "hot spots"

View towards northeast, of corner of foundation where United Heckathorn building once stood. Highest levels of DDT found on the surface beneath crushed rock.

View through the north of excavation pit for train scale

View towards the west of highly contaminated area of train scale excavation

APPENDIX D

INTRODUCTION

This report presents a work plan for interim remedial action measures at the United Heckathorn site in Richmond, California. This remedial action is being undertaken to mitigate the presence of elevated levels of chlorinated pesticides and organic solvents in what is believed to be a relatively confined area of the site.

During the week of July 21, 1986, Levin-Richmond Terminal Corporation (LRTC) began excavation for the construction of a train scale located within the former United Heckathorn site. The train scale construction proposal was presented to the regulatory agencies in a letter dated April 21, 1986 outlining the details of construction and the location of the scale. To a point of excavating approximately 4 to 5 feet above the water table, an odorous, oily liquid seeped from the side wall of the excavation into the bottom. In the attempt to contain the oily liquid, a hole was advanced below the water table into the bay mud. The construction was terminated at that time until a determination could be made as to the source and composition of the liquid. LRTC subsequently contacted EAL Corporation to sample and analyze the liquid; their analysis identified the following components:

Component	Concentration (ppm)
DDT	400,000
Chlorobenzene	20
Ethyl benzene	1,800
Acetone	660
Xylene	12,000
DDD	1,200
Endrin	93

Harding Lawson Associates (HLA) later collected a soil sample from the zone of visible contamination within the excavation. The soil sample contained the following contaminants:

Component	Concentration (ppm)
DDT	2,300
DDD	1,500
Xylene	28
Ethyl benzene	0.11

Analysis for purgeable halocarbons detected none of those parameters.

Based on field observations and the results of the chemical analyses, it appears that this location may have been subject to a past spill which resulted in a localized area of high contamination by both organic solvents and chlorinated pesticides. The fact that a monitoring well (B30) near this location has not shown levels of these solvent contaminants above 10 ppb indicates that significant effects of the spill have remained localized. In addition, this area of the site was found to contain no free ground water in the fill above the bay mud. Thus, ground-water flow in this area essentially nonexistent in the area above the bay mud. Based on our previous field investigation, the ground-water elevation at this location was found to vary between 0.2 to 1.2 feet above Mean Sea Level (MSL). The top of the bay mud in this area is at 4.6 feet MSL. The hydrocarbon contamination within the excavation was found at about 5 to 6 feet MSL, above the water table. Previous investigations have indicated that this area is not under tidal influence, and there appears to be no direct connection to the adjacent Lauritzen Canal.

FILE: PO

STATE OF CALIFORNIA

United Heckathorn

DEPARTMENT OF FISH AND GAME

Contra Costa County

INTRAOFFICE CORRESPONDENCE

CC:004 w9

DOCUMENT SOURCE

DATE: August 11, 1960

DOHS

TO: Fred W. Kemp, Warden

RWQCB

FH6

FROM: H. E. Pintler, Pollution Bioanalyst

OTHER

DATE 7/15

SUBJECT: United-Heckathorn Co., Richmond, Contra Costa County - Results of analysis of water and fish samples submitted to the State Department of Public Health.

The attached analysis slips from the Department of Public Health were received today. A brief tabulation of the results is given below:

Date	F&G NO.	DPH NO.	Type of Sample	Concentration DDT (ppm)
June 29, 1960	1	C4626	Water	0.09
"	2	C4627	"	0.07
"	3	C4628	"	0.10
"	4	C4629	"	0.13
"	5	C4630	"	0.08
"	6	C4631	"	None
June 29, 1960	A	C4632	Fish	18.0
"	B	C4633	"	11.0
"	C	C4634	"	10.0
"	D	C4635	"	24.0
"	E	C4636	"	15.0

State of California

Memorandum

Department of Public Health

FEB 3 1965

Chem West Co CCO. 004
Contra Costa Co

To : Mr. Don Lollock, Pollution Bioanalyst
State Dept. of Fish & Game, Region III
Ferry Building, Room 3000
San Francisco, California

Attention: Mr. Fred Kemp

Date : February 3, 1965

Subject: Sanitation & Radiation Laboratory Samples 154, 155, and 156.

From : A. E. Greenberg, Chief
Sanitation and Radiation Laboratory

Attached are the laboratory reports on Sanitation and Radiation Laboratory Samples 154, 155, and 156, submitted by Mr. Fred Kemp on 13 January 1965. These samples, identified as trade waste, were analyzed for pesticides with particular attention to DDT. After appropriate extraction procedures the samples were subjected to analysis using paper chromatography, gas-liquid chromatography, and infrared spectrophotometry. These techniques clearly indicated the presence of DDT in the three samples at the following levels:

SRL #154: >430 mg/l DDT
SRL #155: >140 mg/l DDT
SRL #156: >260 mg/l DDT

Although it appeared possible to do so, quantitation beyond the level indicated was not attempted.

Spectrograms, chromatograms, and data and calculation sheets will be retained in the Sanitation and Radiation Laboratory files.

A E Greenberg

AEG
ERT:mn

Chlorinated Pesticides and PCB's

Collector's Name Dick Engard

Sampling Location United Heckathorn
S. 4th St. Richmond

Date Received by Laboratory 9/1/82

Collector's Sample # DEE 083 to 084

Analytical Procedure: Sample(s) were extracted with organic solvents. Constituents were determined by gas chromatography with electron capture detector according to HML Methods (refer to AOAC, 13th Ed., 29.013).

(PPM)

HML #	5780	5781					Detection Limit/ Units
Collector's Sample #	DEE 083	DEE 084					
*Aldrin	-	-					0.1
*a-BHC							0.1
*b-BHC							0.1
*c-BHC							0.1
*g-BHC (Lindane)							0.1
*Chlordane							0.2
*4,4'-DDE	31	0.37					0.2
*4,4'-DDD	35	0.90					0.2
*4,4'-DDT	120	0.64					0.3
*Dieldrin							0.2
*Endosulfan I							0.2
*Endosulfan II							0.2
*Endosulfan sulfate							0.3
*Endrin							0.2
*Endrin aldehyde							0.2
*Heptachlor							0.1
*Heptachlor epoxide							0.1
*Toxaphene							1.0
*PCB's (calc. as)							
Methoxychlor							0.1
PCNB							0.3
Perthane							0.2
Trithion							0.5

*Constituents on EPA priority pollutant list

Note: (-) = Not detected
(blank) = Not determined

Analyst's Signature David Mebane 9/24/82 (Date)

Signature of Supervising Chemist [signature] 9-24- (Date)

Final

California Department of Health Services
Hazardous Materials Laboratory

HML # 6189 to

LABORATORY REPORT
Chlorinated Pesticides and PCB's

Collector's Name DICK BURGARD
Date Received by Laboratory 10/6/82
Sampling Location LEVIN METALS/UNITED HECKO - THORN, 24th & CUTTING, RICHMOND
Collector's Sample # DBE 092 to

Analytical Procedure: Sample(s) were extracted with organic solvents. Constituents were determined by gas chromatography with electron capture detector according to HML Methods (refer to AOAC, 13th Ed., 29.013).

HML #	6189						Detection Limit/ Units
Collector's Sample #	DBE 092						
*Aldrin	—						0.1
*a-BHC	—						0.1
*b-BHC	—						0.1
*c-BHC	—						0.1
*g-BHC (Lindane)	—						0.1
*Chlordane	—						0.2
*4,4'-DDE	2.4 ug/g						0.2
*4,4'-DDD	—						0.2
*4,4'-DDT	6.1 ug/g						0.3
*Dieldrin	—						0.2
*Endosulfan I	—						0.2
*Endosulfan II	—						0.2
*Endosulfan sulfate	—						0.3
*Endrin	—						0.2
*Endrin aldehyde	—						0.2
*Heptachlor	—						0.1
*Heptachlor epoxide	—						0.1
*Toxaphene	—						1.0
*PCB's (calc. as)	—						
Methoxychlor	—						0.1
PCNB	—						0.3
Perthane	—						0.2
Trithion	—						0.5

*Constituents on EPA priority pollutant list
Note: (-) = Not detected
(blank) = Not determined

Analyst's Signature _____ 12/15/82 (Date)

Signature of Supervising Chemist _____ 12-15-82 (Date)

California Department of Health Services
Hazardous Materials Laboratory

Partial HML # 6189 to _____

LABORATORY REPORT
Organophosphorus Pesticides

Collector's Name Dick Burgard Date Collected 10/5/82

Sampling Location Levin Metals/United Heckathorn 4th + Cutting Richmond Collector's Sample # _____ to _____

Analytical Procedure: Sample(s) were extracted with organic solvents. Constituents were determined by gas chromatography with nitrogen-phosphorus detector according to HML Methods (refer to AOAC, 13th Ed., 29.013).

HML #	6189						Detection Limit/ Units
Collector's Sample #	DBE 892						
DEF	—						<0.5
Diazinon	—						<0.5
Dioxathion	—						
Disyston							
Ethion	—						<0.5
Ethyl parathion	—						<0.5
Folex							
Malathion	—						<0.5
Methyl parathion	—						<0.5
Phimet	—						<0.5
Trithion	—						<1.0

Note: (-) = Not detected
(blank) = Not determined

Analyst's Signature Douglas Hayward 12/15/82 (Date)

Signature of Supervising Chemist JNJ Norman Low 12/22/82 (Date)

10-5-82

N

Cutting Blvd

South 47½ St.

Lauritzen Canal

Electrical Enclosure

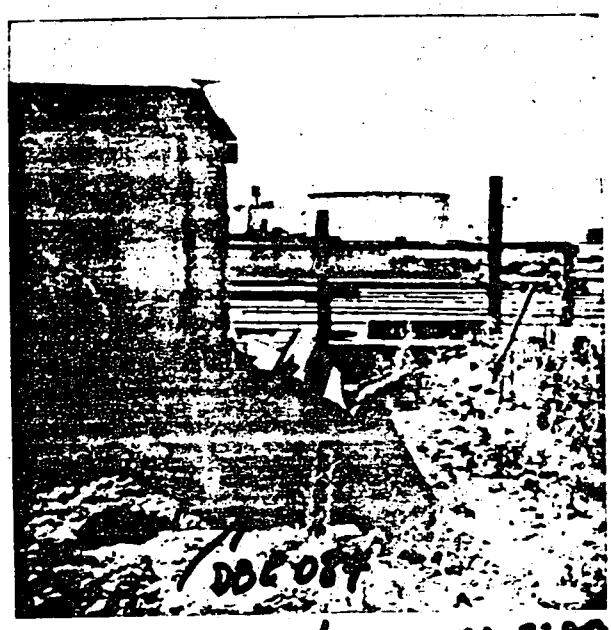
DBE092 (Composite Sample)

Demolished Warehouse Shed

United Heckathorn/Levin Metals 10-5-82 DBE facing N at edge of Berth "C"

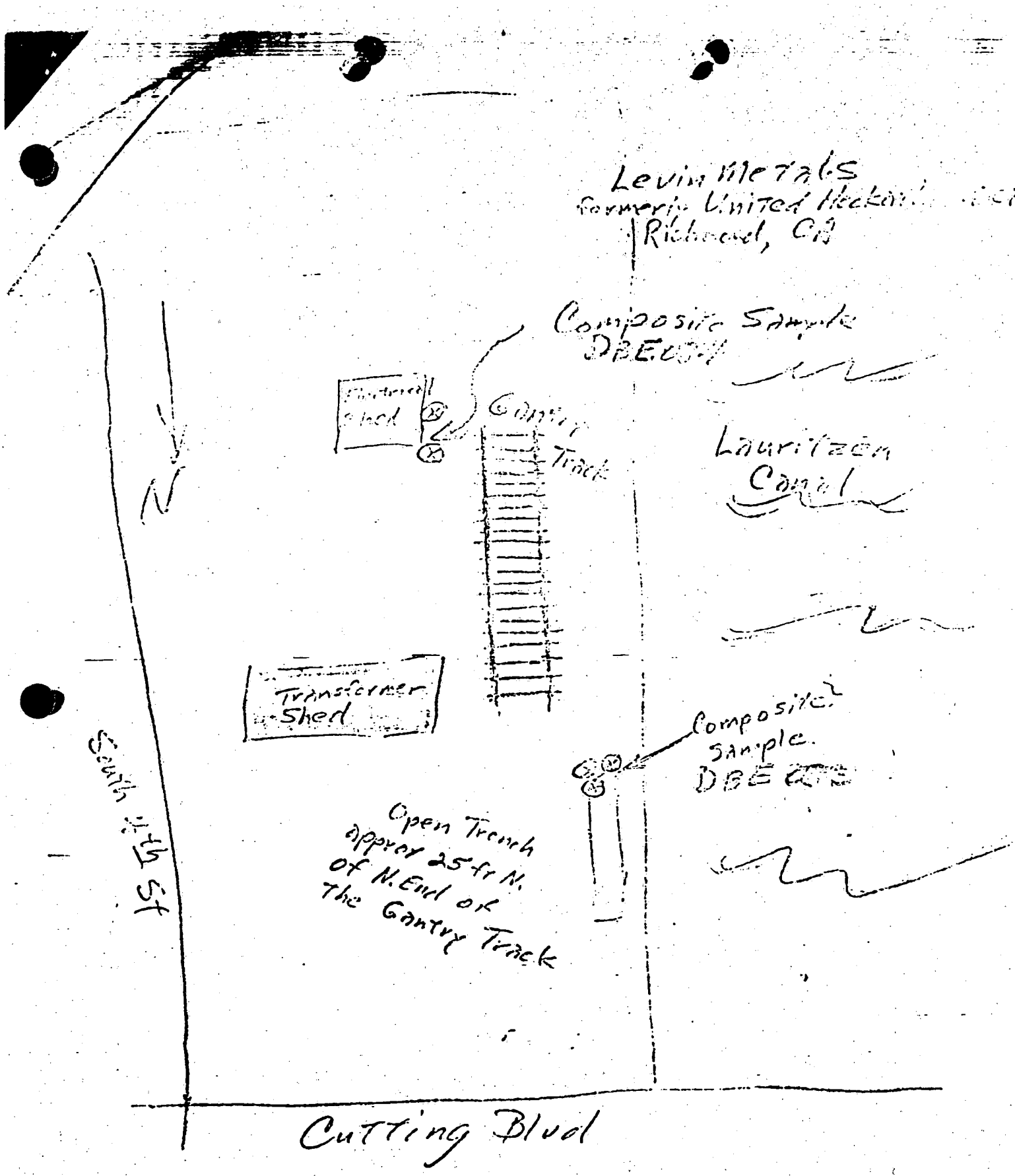
United Heckathorn
Richmond CA
8-30-82

United Heckathorn 8-30-82 DDE
Trench Next to Scale Bldg
Facing N



United Heckathorn 8-30-82 DDE
8-30-82

United Heckathorn 8-30-82 DDE
Trench Next to [redacted] electrical area
Facing South


Levin Metals
formerly United Heckathorn
Richmond, CA
Composite Sample
DBE004
Gantry Track
Lauritzen Canal
N
Transformer Shed
Composite Sample
DBE005
Open Trench
appror 25 ft N.
of N. End of
The Gantry Track
South 45 St
Cutting Blvd

HAZARDOUS MATERIALS LABORATORY

LABORATORY REPORT

TJ: TO: David Pontecorvo (name of person requesting analysis) HML # 2611

COPY TO Bart Simmons

COLLECTOR'S SAMPLE # DMP09 DATE OF REPORT 02 05 81

DATE COLLECTED 11 05 80 (mo day yr)

LOCATION OF SAMPLE COLLECTION:

NAME Parr-Richmond Term. / United Hekatron

ADDRESS _____ (number street city state zip)

ANALYTICAL PROCEDURES USED: Hexane-acetone extraction. GC w. NPD and ECD

REFERENCE: _____

ANALYSIS RESULTS:

Aldrin	35 µg/g
pp' DDE	330
pp' DDT	8200
Thimet	< 0.1 µg/g
Methyl parathion	< 0.1
DEF	< 6
Ethion	< 7
Trithion	< 1
Dioxathion	< 0.3
Diazinon	< 0.1
Disyston	< 0.3
malathion	< 0.3
Folex	< 2
α BHC	< 0.4
Lindane	< 0.6
Heptachlor	< 0.9
Heptachlor epoxide	< 0.4
Endosulfan I	~~< 0.4~~ < 1.0
II	< 0.7
Methoxychlor	< 0.2

ANALYSTS' SIGNATURES:

1. Norman Low 2/3/81 (date)

SIGNATURE OF SUPERVISING CHEMIST

BPS Exhibit 2/5/81 (date)

HML # 2221 to 2229

HAZARDOUS MATERIALS LABORATORY

LABORATORY REPORT

2 of 2

TO: Ed Ochi
(name of person requesting analysis)

DATE OF REPORT: 10.7.80

COLLECTOR'S SAMPLE #: ____________ to ____________

DATE COLLECTED: 8.13.80

LOCATION OF SAMPLING:

NAME Parr - Richmond Terminal Co.

TEL. NO. (415) 232-44--

ADDRESS 401 Whitt Ave. Richmond CA 94804
(number) (street) (city) (state) (zip)

ANALYTICAL PROCEDURES USED: metal scan & Acid [illegible]ction & XRF.

REFERENCES: ____________

ANALYSIS RESULTS

Metal analysis: PPM ± Error

HML #	2225	2229		
Insp. Spl #	EO-5A	EO-9A		
Ag	—	—		
As	—	—		
Ba	—	—		
Bi	—	—		
Cd	—	—		
Co	—	—		
Cr	—	—		
Cu	11700 ± 1100	16 ± 6		
Fe	83700 ± 8[illegible]	83700 ± 8[illegible]0		
Hg				
Mn	167 ± 45	481 ± 48		
Mo	26 ± 8	7 ± 4		
Ni	205 ± 22	11 ± 8		
Pb	785 ± 78	—		
Sb	—	—		
Se	—	—		
Sn	316 ± 34	—		
Sr	36 ± 8	—		
Tl	—	—		
V	—	—		
Zn	5610 ± 560	9 ± 6		
Ga	31 ± 18	—		
Hf	498 ± 287	—		
Ti	—	1310 ± 130		
Th	—	40 ± 8		
In	—	19 ± 16		

Other analyses

Note: (—): below detection limit of instrument
(blank): not determined

Analyst: Ismail Garcia (signature) 10/7/80 (date)

Supervising Chemist: Eddy Vis[illegible] (signature) 10[illegible] (date)

H..ARDOUS MATERIALS LABORATO..

HML 2221-2229

LABORATORY REPORT

TO: Ed Ochi
(name of person requesting analysis)

HML #

COPY TO

COLLECTOR'S SAMPLE # EO-1 to EO-9

DATE OF REPORT 1 0 0 7 8 0

DATE COLLECTED 0 8 1 3 8 0
mo day yr

LOCATION OF SAMPLE COLLECTION:

NAME Parr - Richmond Terminal Co.

ADDRESS 415 Wright Ave Richmond CA.
number street city state zip

ANALYTICAL PROCEDURES USED: Pesticides (chlor.) & solvents (Extracted with Hexane/aceto[illegible] hexane layer analyzed by GC using ECD. Free sulfur was analyzed by A.O.A.C. method. Dinoseb determined by TL[illegible] and spectrophotometrically.

REFERENCE:

ANALYSIS RESULTS:

PPM of Pesticides

Insp #	HML #	α-BHC	Lindane (4)	o,p' DDE (1)	p,p' DDE (1)	o,p' DDT (1)	p,p' DDT (1)	Mirex (5)	Aldrin (1.4)	Dinoseb	Chlori. Solvents	Fre[illegible] Su[illegible]
EO-1	2221	.01	.01	14.0 ✓	13.9 ✓	65.7 ✓	61.4 ✓	N.D.	28.8 ✓	9960 ✓	-	
EO-3	2223	—	—	—	—	—	—	—	—	—	—	8.
EO-4	2224	<.01	N.D.	.24	1.9 ✓	N.D.	0.9	<.01	.03	-	-	
EO-6	2226	6.9	(conf) 4.8 ✓	34.5 ✓	19.5 ✓	83.2 ✓	115.6 ✓	N.D.	36.2 ✓	-	-	
EO-7	2227	0.9	.06	8.2 ✓	10.1 ✓	21.7 ✓	36.0 ✓	0.5	7.7 ✓	-	not detected	
EO-8	2228	21.8	20.6 ✓	157.8 ✓	143.2 ✓	315.4 ✓	895.3 ✓	N.D.	115.5 ✓	-	-	

ANALYSTS' SIGNATURES: (–) means not analyzed
N.D. = Not detected

1. ____________ date ____

2. Ismail Garcia 10/7/80
date

SIGNATURE OF SUPERVISING CHEMIST

E. Ko Vina 10/9/80
date

...rnia—Health and Welfare Agency

Department of Health Services

HML No. [illegible]

TY

...n)

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

...T I: FIELD SECTION

...lector [illegible] Date Sampled 11/5/80 Time [illegible] Hours

...CATION OF SAMPLING:

Name [illegible] Tel. No.

Address 402 [illegible] [illegible] Co
Number Street State Zip

HML No. (Lab Only)	Collector's Sample No.	Type Of Sample*	FIELD INFORMATION**
2611	DMP 09	Soil	From bottom of [illegible] in pesticide formulation area.

...equested: Organo-phosphates

...ain of Custody:

Signature	Title	Inclusive Dates
[illegible]	Project Assistant/ASP	11/5/80 – 11/5/80
		–
		–
		–

...ecial Remarks (e.g., duplicate sample given to company, etc.)

...RT II: LABORATORY SECTION

...eceived By [illegible] Title CS Date 11/6/80

...mple Allocation: ☐ HML ☐ SCBL ☐ LBL ☐ Other Date

...ns Required [illegible] chlorinated pesticides.

PRIORITY [ ] Medium
(explain) Would like to finish up the site.

HML No. ___ to ___

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

COLLECTOR Ed Ochi DATE SAMPLED 08.13.80 TIME 10-11 Am

LOCATION OF SAMPLING:

NAME Parr-Richmond Terminal Company (United Heckathorn) TEL NO. (415) 232-4422

ADDRESS 401 Wright Avenue, Richmond CA 94804
(number / street / state / zip)

HML NO. (Lab only)	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
2221	EO 1	soil	near RR tracks—photos # 4 & 5
X 2222	EO 2	solid	near train car weighing station photos # 6 &
2223	EO 3	solid	falling out of corroded drum; photos # 8 & 9
2224	EO 4	soil	next to RR tracks; photo # 10
2225	EO 5	powder	from large pile, approx 50 m^2; photos # 11 &
2226	EO 6	soil, composite	north end of trench; photos #13 & 14

ANALYSIS REQUESTED: See attached sheet.

CHAIN OF CUSTODY:

1. _____ signature _____ title _____ inclusive dates
2. _____ signature _____ title _____ inclusive dates
3. _____ signature _____ title _____ inclusive dates
4. _____ signature _____ title _____ inclusive dates

SPECIAL REMARKS (e.g. duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

RECEIVED BY _____ TITLE _____ DATE _____

SAMPLE ALLOCATION: [ ] HML [ ] SCBL [ ] LBL [ ] OTHER _____ DATE _____

ANALYSIS REQUIRED

*Indicate whether sample is sludge, soil, etc.; **Use back of page for addition

HML NO. _____

PRIORITY ☐ Medium
(explain)_____

HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

COLLECTOR Ed Ochi DATE SAMPLED 08.13.80 TIME 10-11 AM HOURS

LOCATION OF SAMPLING:

NAME Parr-Richmond Terminal Company (United Heckathorn) TEL NO. (415) 232-4422

ADDRESS 401 Wright Avenue, Richmond, CA 948
number street state zip

HML NO. (Lab only)	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
>>>7	EO 7	soil	south end of trench; photos #
>>>8	EO 8	oily solid	south end of trench--photos # 1
>>>9	EO 9	soil	south end of trench; photos # 15 & 16

ANALYSIS REQUESTED:

CHAIN OF CUSTODY:

1. _____ signature _____ title _____ inclusive dates
2. _____ signature _____ title _____ inclusive dates
3. _____ signature _____ title _____ inclusive dates
4. _____ signature _____ title _____ inclusive dates

SPECIAL REMARKS (e.g. duplicate sample given to company, etc.)

PART II: LABORATORY SECTION

RECEIVED BY _____ TITLE _____ DATE _____

SAMPLE ALLOCATION: ☐ HML ☐ SCBL ☐ LBL ☐ OTHER _____ DATE

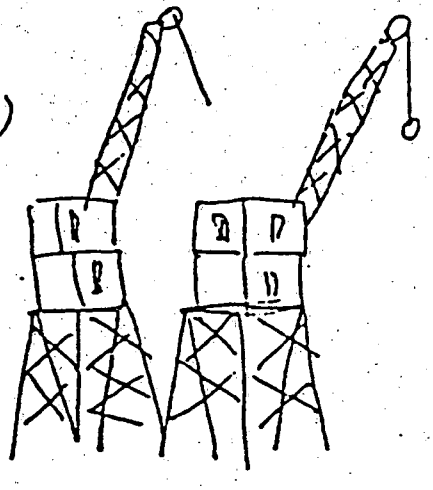
ANALYSIS REQUIRED

*Indicate whether sample is sludge, soil, etc.; **Use back of page for additi

United Hed-athorn

Photo Guide----

(keyed to actual slide #)

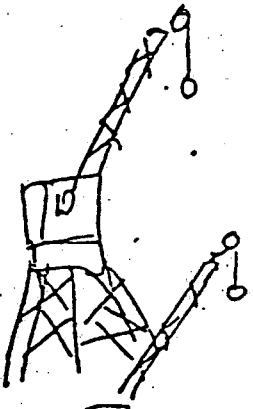


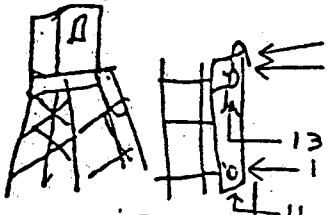
PARR-RICHMOND TERMINAL CO. OFFICE

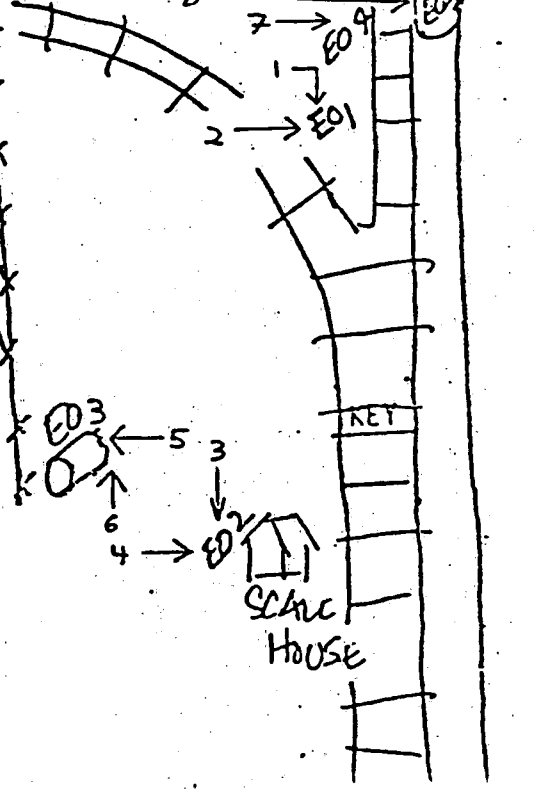
SCALES

WRIGHT ST.

SOUTH 4th ST.







1 41

HARDING-LAWSON ASSOCIATES
OFFICE MEMORANDUM

To: FILE Date: 5/19/83

From: JCD File: 13.002.02.01

Subject: Preliminary Test results on groundwater from P5

From EML Corporation:

All results on ppb

Pesticide	Filtered Sample	Unfiltered Sample
Lindane	0.02	0.02
Aldrin	0.04	0.08
OP DDE	0.30	1.0
OP DDD	0.60	15
OP DDT	0.60	51
PP DDE	0.10	7.2
PP DDD	0.50	10
PP DDT	0.80	94

ANALYTICAL SCIENCE ASSOCIATES, Inc.
4560 HORTON ST. • EMERYVILLE, CA 94608 • (415) 547-6390

July 11, 1983

Jim Davies
Harding Lawson Assoc.
7655 Redwood Blvd.
Novato, Ca. 94948

Dear Jim:

Enclosed please find the report for the Richmond-Levin soil samples.
If you have any questions feel free to call anytime.

Sincerely,

Bill

William Prater
Senior Scientist

TABLE ONE

PARAMETER	B-1 (1.0)	B-1 (3.0)	B-2 (0.5)	B-2 (2.0)
α BHC	ND	ND	ND	ND
β BHC	ND	ND	ND	ND
γ BHC	ND	ND	ND	ND
ALDRIN	ND	ND	ND	ND
P,P' DDE	5.0	0.12	ND	8.4
O,P' DDD	ND	ND	ND	30
P,P' DDD	6.4	0.45	ND	7.9
O,P' DDT	14	0.50	ND	26
P,P' DDT	68	2.2	ND	180
COPPER	59	150	500	100
ZINC	280	60	520	200
NICKEL	130	34	160	70
LEAD	100	ND	200	260
ARSENIC	13	16	5	13

ALL RESULTS IN PPM

PARAMETER	B-3 (1.0)	B-3 (5.0)	B-4 (0.5)	B-1 (1.0)
α BHC	ND	ND	21	4.8
β BHC	ND	ND	14	ND
γ BHC	ND	ND	51	12
ALDRIN	ND	ND	21	5.5
P,P' DDE	8.9	0.51	24	8.7
O,P' DDD	ND	ND	ND	ND
P,P' DDD	9.3	0.88	160	48
O,P' DDT	15	2.3	87	41
P,P' DDT	78	13	330	140
COPPER	150	100	270	160
ZINC	430	120	370	270
NICKEL	100	91	140	140
LEAD	220	32	130	100
ARSENIC	10	16	17	1.5

ALL RESULTS IN PPM

PARAMETER	B-4 (2.0)	B-4 (3.0)	B-4 (3.5)	B-4 (6.5)
α BHC	0.015	0.47	ND	0.79
β BHC	ND	ND	ND	ND
γ BHC	0.03	0.19	0.92	0.64
ALDRIN	0.40	1.0	0.92	ND
P,P' DDE	4.0	94	26	1.9
O,P' DDD	ND	ND	ND	ND
P,P'DDD	4.4	100	83	16
O,P' DDT	38	140	92	13
P,P' DDT	120	400	230	46
COPPER	77	36	27	55
ZINC	71	150	97	77
NICKEL	34	17	23	23
LEAD	21	21	ND	ND
ARSENIC	8.5	12	11	9.6

ALL RESULTS IN PPM

PARAMETER	B-4 (9.0)	B-5 (1.0)	B-5 (4.0)	B-6 (0.5)
α BHC	ND	0.02	0.026	ND
β BHC	ND	ND	ND	ND
γ BHC	ND	0.04	0.06	ND
ALDRIN	ND	ND	ND	ND
P,P' DDE	ND	0.10	0.17	78
O,P' DDD	ND	ND	ND	ND
P,P' DDD	1.0	0.36	0.60	36
O,P' DDT	ND	0.49	0.77	64
P,P' DDT	3.8	2.5	3.9	460
COPPER	64	29	41	680
ZINC	94	66	46	920
NICKEL	44	45	24	91
LEAD	ND	20	ND	480
ARSENIC	24	9.2	10	0.5

ALL RESULTS IN PPM

PARAMETER	P-1	P-2	P-3	P-4	P-5	P-6
α BHC	ND	ND	ND	ND	ND	ND
β BHC	ND	ND	ND	ND	ND	ND
γ BHC	ND	ND	ND	ND	ND	ND
ALDRIN	ND	ND	ND	ND	ND	ND
P,P' DDE	12	110	1400	44	14	0.80
O,P' DDD	ND	ND	ND	ND	ND	ND
P,P' DDD	29	200	6500	160	35	2.8
O,P' DDT	78	1900	12000	500	59	5.6
P,P' DDT	700	13000	80,000	7,100	400	37
COPPER	340	220	200	36	100	12
ZINC	720	1400	1100	210	200	57
NICKEL	69	46	46	23	80	80
LEAD	1200	860	630	170	150	ND
ARSENIC	13	27	12	0.2	19	11

ALL RESULTS IN PPM

PARAMETER	P-10	P-11	P-12	P-13
α BHC	ND	ND	ND	ND
β BHC	ND	ND	ND	ND
γ BHC	ND	ND	ND	ND
ALDRIN	ND	ND	ND	ND
P,P' DDE	1.0	10	20	18
O,P' DDE	ND	ND	ND	ND
P,P' DDE	0.85	7.5	15	18
O,P' DDT	2.2	13	40	63
P,P' DDT	7.1	83	400	300
COPPER	40	36	20	60
ZINC	50	70	150	170
NICKEL	30	35	80	70
LEAD	120	140	160	270
ARSENIC	3.0	7.0	14	17

ALL RESULTS IN PPM

PARAMETER	P-7	P-8	G-W**	B-4 (1.5)	G-W 2	P-9
α BHC	0.20	ND	ND	0.31	ND	ND
β BHC	ND	ND	ND	0.75	ND	ND
γ BHC	0.48	ND	0.53	0.80	ND	ND
ALDRIN	ND	ND	ND	0.80	ND	ND
P,P' DDE	52	4.7	10	9.3	0.0015	6.4
O,P' DDD	ND	ND	ND	ND	ND	ND
P,P' DDD	210	12	14	19	ND	1.8
O,P' DDT	710	25	68	66	0.0071	6.5
P,P' DDT	22000	250	500	260	0.0054*	33
COPPER	160	26	ND	73	ND	26
ZINC	570	200	0.12	97	0.071	70
NICKEL	46	24	ND	45	ND	21
LEAD	650	150	ND	22	ND	130
ARSENIC	7.4	6.1	ND	14	ND	2.6

* WATER ONLY

** WATER AND SEDIMENT

ALL RESULTS IN PPM

TABLE II

COMPARISON DATA
FROM BROWN & CALDWELL
ORGANIC DATA BY GCMS

PARAMETER	B-1 0'	B-4 11.0'	P-3
Aldrin	k0.7	5	280
Lindane	k0.9	17	k4
o,p'-DDD	10	32	1,500
p,p'-DDD/o,p'-DDT	63	190	21,000
Dinoseb	k8	k8	400
o,p-DDE	1	0.5	70
p,p'-DDE	11	9	1,300
p,p'-DDT	63	190	21,000
Arsenic	9.8	14	16
Copper	61	140	150
Lead	160	89	520
Nickel	110	120	40
Zinc	290	240	1,100

Concentration: mg/kg, as received
k = less than value.

EAL Corporation

Thermo Electron CORPORATION

2030 Wright Avenue
Richmond, California 94804
(415) 235-2633
(TWX) 910-382-8132

ANALYSIS REPORT

HARDING LAWSON ASSOCIATES
P O BOX 578
NOVATO CA 94947
ATTENTION: BILL FRIZZELL

DATE: 5-7-84
Samples Received: 3-27-84
EAL W.O. No. 48-5800
Purchase Order No. NONE

Analysis	Units	B-11 SOIL 1.0'-1.5' 255-92-1	B-14 SOIL 8.5'-9.0' 255-92-2
Antimony	MG/KG	12	17
Arsenic	MG/KG	<0.1	<0.1
Beryllium	MG/KG	<0.5	<0.5
Cadmium	MG/KG	4.5	1.3
Chromium	MG/KG	280	58
Copper	MG/KG	380	56
Lead	MG/KG	2800	36
Mercury	MG/KG	0.7	0.09
Nickel	MG/KG	110	49
Selenium	MG/KG	<0.1	<0.1
Silver	MG/KG	0.4	0.5
Thallium	MG/KG	<3	<3
Zinc	MG/KG	350	83
Cyanide	MG/KG	<0.5	<0.5
Phenol	MG/KG	<0.5	<0.5
pH		7.7	7.6
Pesticides	---see attached report--		
Acid & Base/Neutrals	---see attached report--		
Volatile Organics	---see attached report--		

George E. Dunstan
Program Manager

Harding Lawson

Date: May 3, 1984
EAL Lab No.: 255-92-1
Client I.D.: B-11 1.0'1.5'

Compound	ug/kg(ppb)	Compound	ug/kg(ppb)
a-BHC	<10	pp-DDT (4,4')	84
g-BHC	<10	Endrin Aldehyde	<10
B-BHC	18	Endosulfan Sulfate	220
Heptachlor	<10	Chlordane	<10
D-BHC	<10	Toxaphene	<10
Aldrin	<10	PCB's	
Heptachlor Epoxide	100	PCB-1016	<10
a-Endosulfan	<10	PCB-1221	<10
p,p-DDE (4,4')	81	PCB-1232	<10
Dieldrin	310	PCB-1242	<10
Endrin	140	PCB-1248	<10
p,p-DDD (4,4')	100	PCB-1254	<10
B-Endosulfan	<10	PCB-1260	<10
1,2,3,4-TCDD	<10	PCB-1262	<10

Harding Lawson

Date: May 3, 1984
EAL Lab No.: 255-92-2
Client I.D.: B-14 8.5'-9.0'

Compound	ug/kg(ppb)	Compound	ug/kg(ppb)
a-BHC	<10	pp-DDT (4,4')	45
g-BHC	<10	Endrin Aldehyde	<10
B-BHC	<10	Endosulfan Sulfate	<10
Heptachlor	<10	Chlordane	<10
D-BHC	<10	Toxaphene	<10
Aldrin	<10	PCB's	
Heptachlor Epoxide	<10	PCB-1016	<10
a-Endosulfan	<10	PCB-1221	<10
p,p-DDE (4,4')	<10	PCB-1232	<10
Dieldrin	<10	PCB-1242	<10
Endrin	<10	PCB-1248	<10
p,p-DDD (4,4')	110	PCB-1254	<10
B-Endosulfan	<10	PCB-1260	<10
1,2,3,4-TCDD	<10	PCB-1262	<10

Harding Lawson

Date: May 2, 1984
EAL Lab No.: 255-92-1
Client I.D.: B-11 1.0'-1.5'

PRIORITY POLLUTANT DATA SHEET

VOLATILES	ug/kg(ppb)	VOLATILE	ug/kg(ppb)
acrolein	<20	trans-1,3-dichloropropene	< 1
acrylonitrile	<20	cis-1,3-dichloropropene	< 1
benzene	< 1	ethylbenzene	< 1
carbon tetrachloride	< 1	methylene chloride	< 1
chlorobenzene	< 1	chloromethane	< 1
1,2-dichloroethane	< 1	bromomethane	< 1
1,1,1-trichloroethane	< 1	bromoform	< 1
1,1-dichloroethane	< 1	bromodichloromethane	< 1
1,1,2-trichloroethane	< 1	fluorotrichloromethane	< 1
1,1,2,2-tetrachloroethane	< 1	dichlorodifluoromethane	< 1
chloroethane	< 1	chlorodibromomethane	< 1
2-chloroethylvinyl ether	< 1	tetrachloroethene	< 1
chloroform	< 1	toluene	14
1,1-dichloroethene	< 1	trichloroethene	< 1
trans-1,2-dichloroethene	< 1	vinyl chloride	< 1
1,2-dichloropropane	< 1		

NON-PRIORITY POLLUTANT

carbon disulfide	< 1	acetone	<10
4-methyl-2-pentanone	<10	2-butanone	<20
styrene	< 1	2-hexanone	<10
vinyl acetate	< 2	xylenes	< 1

EAL Corporation

Thermo Electron CORPORATION

2030 Wright Avenue
Richmond, California 94804
(415) 235-2633
(TWX) 910-382-8132

ANALYSIS REPORT

HARDING LAWSON ASSOCIATES
P O BOX 578
NOVATO CA 94947
ATTENTION: BILL FRIZZELL

DATE: 5-7-84
Samples Received: 4-2-84
EAL W.O. No. 48-5800
Purchase Order No. NONE

nalysis	Units	B-14 WATER 255-94-1
ntimony	MG/L	<0.05
rsenic	MG/L	<0.01
eryllium	MG/L	<0.01
admium	MG/L	<0.01
hromium	MG/L	0.02
opper	MG/L	0.01
ead	MG/L	0.04
ury	MG/L	<0.001
l	MG/L	0.02
elenium	MG/L	<0.005
ilver	MG/L	<0.01
hallium	MG/L	0.03
inc	MG/L	0.02
esticides	---see attached report--	
cid & Base/Neutrals	---see attached report--	
olatile Organics	---see attached report--	
hloride	MG/L	810
onductivity	uMHO/CM	3400
yanide	MG/L	<0.02
xygen, Dissolved	MG/L	5.6
henol	MG/L	<0.1
H		6.8

George E. Dunstan
Program Manager

Harding Lawson

Date: May 3, 1984
EAL Lab No.: 255-94-2
Client I.D.: B-14 Water

Compound	ug/L(ppb)	Compound	ug/L(ppb)
a-BHC	2.6	pp-DDT (4,4')	1.7
g-BHC	1.1	Endrin Aldehyde	1.9
B-BHC	2.2	Endosulfan Sulfate	<0.5
Heptachlor	<0.5	Chlordane	<0.5
D-BHC	0.6	Toxaphene	<0.5
Aldrin	<0.5	PCB's	
Heptachlor Epoxide	<0.5	PCB-1016	<0.5
a-Endosulfan	<0.5	PCB-1221	<0.5
p,p-DDE (4,4')	<0.5	PCB-1232	<0.5
Dieldrin	2.0	PCB-1242	<0.5
Endrin	1.7	PCB-1248	<0.5
p,p-DDD(4,4')	9.2	PCB-1254	<0.5
B-Endosulfan	<0.5	PCB-1260	<0.5
1,2,3,4-TCDD	<0.5	PCB-1262	<0.5

Harding Lawson

Date: May 2, 1984
EAL Lab No.: 255-94-3
Client I.D.: B-14 Water

PRIORITY POLLUTANT DATA SHEET

VOLATILES	ug/L(ppb)	VOLATILE	ug/L(ppb)
acrolein	<20	trans-1,3-dichloropropene	< 1
acrylonitrile	<20	cis-1,3-dichloropropene	< 1
benzene	< 1	ethylbenzene	< 1
carbon tetrachloride	< 1	methylene chloride	< 1
chlorobenzene	7	chloromethane	< 1
1,2-dichloroethane	< 1	bromomethane	< 1
1,1,1-trichloroethane	< 1	bromoform	< 1
1,1-dichloroethane	< 1	bromodichloromethane	< 1
1,1,2-trichloroethane	< 1	fluorotrichloromethane	< 1
1,1,2,2-tetrachloroethane	< 1	dichlorodifluoromethane	< 1
chloroethane	< 1	chlorodibromomethane	< 1
2-chloroethylvinyl ether	< 1	tetrachloroethene	< 1
chloroform	< 1	toluene	< 1
1,1-dichloroethene	< 1	trichloroethene	< 1
trans-1,2-dichloroethene	24	vinyl chloride	< 1
1,2-dichloropropane	< 1		

NON-PRIORITY POLLUTANT

carbon disulfide	< 1	acetone	<10
4-methyl-2-pentanone	<10	2-butanone	<20
styrene	< 1	2-hexanone	<10
vinyl acetate	< 2	xylenes	< 1

EAL Corporation

Thermo Electron CORPORATION

Final Report

AMBIENT AIR MONITORING

United Heckathorn Site

Provided For:
Harding Lawson Associates
Mr. William F. Frizzel P.E.
Senior Engineer

Submitted by:
EAL Corporation/Environmental Sciences Dept.
Philip A. Bumala
Air & Geothermal Program Manager

Reference: EAL 64-0631

Nuclear Sciences
Environmental Sciences
Occupational Health and Safety Services

2030 Wright Avenue • Richmond, California 94804 • (415) 235-2633 • TWX: 910 382-8132

TABLE 2

RESULTS OF ENVIRONMENTAL AIR MONITORING FOR DDT

United Heckathorn Site

Richmond, California

Date	Sampling Period (Time)	Location	Sample Volume (Liter)	DDT ng	DDT mg/m^3
6-10-83*	0901-1104	1	261	< 20	< 0.000100
	0906-1106	2	258	< 20	< 0.000100
	0921-1121	Upwind	265	< 20	< 0.000100
	1110-1330	1	269	< 20	< 0.000100
	1113-1332	2	296	< 20	< 0.000100
	1341-1547	1	203	20	0.000100
	1335-1549	2	226	< 20	< 0.000100
	Field Blank	---	---	< 20	< 0.000100
6-14-83	1013-1250	1	212	1.5	0.000007
	1017-1255	2	190	2.1	0.000011
	1253-1510	1	245	3.1	0.000013
	1257-1514	2	227	1.5	0.000007
	1305-1526	Upwind	234	< 0.5	< 0.000002
	1512-1700	1	211	0.5	0.000002
	Field Blank	---	---	< 0.5	< 0.000002
	1516-1700	2	201	4.1	0.000020

CAL/OSHA Permissible Exposure Limit: 1 mg/m^3.

Note: * Analysis for 6-10-83 samples was done using a gas chromatographic column which produced a higher detection limit than that used for the 6-14-83 samples. However, the detection limit is still more than a factor of 1000 below the CAL/OSHA PEL.

EAL Corporation

Thermo Electron CORPORATION

ENVIRONMENTAL AIR MONITORING SURVEY

at

The United Heckathorn Site
Wright Avenue and South 4th Street
Richmond, California

for

Harding Lawson Associates

by

David R. Fielder, Industrial Hygienist

EAL Work Order No. 61/47-0524

Date: June 16, 1983

Nuclear Sciences
Environmental Sciences
Occupational Health and Safety Services

2030 Wright Avenue • Richmond, California 94804 • (415) 235-2633 • TWX: 910 382-8132

Table 1

HIGH VOLUME AMBIENT DDT PESTICIDES RESULTS

Location No. 1

Interval No.	Time (hrs)	Date	Isomers* pp-DDT (ug/m^3)	pp-DDD (ug/m^3)	pp-DDE (ug/m^3)
1	1211-1143	3/21/84 3/22/84	3.2×10^{-4}	3.6×10^{-5}	
2	1147-1224	3/22/84 3/23/84	13.8×10^{-4}	3.6×10^{-4}	5×10^{-4}
3	1227-1226	3/23/84	3.5×10^{-4}	7.1×10^{-5}	

Location No. 2

1	1211-1134	3/21/84 3/22/84	3.6×10^{-4}	4.7×10^{-5}	
2	1138-1238	3/22/84 3/23/84	5.2×10^{-4}	7.7×10^{-5}	
3	1239-1239	3/23/84 3/24/84	2.1×10^{-4}		

*Reference: Figure 2

Table 2

HIGH VOLUME AMBIENT PARTICULATE RESULTS

Location 1

Interval No./Time(hrs)		Date	Arsenic (ug/m^3)	Copper (ug/m^3)	Lead (ug/m^3)
1	1211-1143	3/21/84 3/22/84	<0.007	0.22	0.44
2	1147-1224	3/22/84 3/23/84	<0.007	0.37	0.64
3	1227-1226	3/23/84	<0.007	0.27	0.12
Location No. 2					
1	1211-1134	3/21/84 3/22/84	<0.007	0.21	0.13
2	1138-1238	3/22/84 3/23/84	<0.007	0.30	0.45
3	1239-1239	3/23/84 3/24/84	<0.007	0.22	0.2

Interval No./Time(hrs)		Date	Nickel (ug/m^3)	Zinc (ug/m^3)	Total Particulate Loading (ug/m^3)
1	1211-1143	3/21/84 3/22/84	<0.09	0.09	85.6
2	1147-1224	3/22/84 3/23/84	0.09	1.32	340.6
3	1227-1226	3/23/84	0.04	0.34	325.7
Location No. 2					
1	1211-1134	3/21/84 3/22/84	0.02	0.22	62.87
2	1138-1238	3/22/84 3/23/84	0.06	0.52	135.4
3	1239-1239	3/23/84 3/24/84	0.07	0.47	125.39

LAURITZEN CANAL

ELUTRIATE ANALYSIS (December 1981)

Contaminants of Concern	Units	Mean Value of 3 Stations	Mean Value Disposal Site (Alcatraz - 3 Stations)	State Water Quality Control Objective (a)
Mercury	mg/L	0.00137	0.0002	0.0014
Cadmium	mg/L	0.005	0.0002	0.03
Lead	mg/L	0.02	0.02	0.08
Oil & Grease	mg/L	<5	<1	75
Petroleum Hydrocarbons	mg/L	<5	<1	-----
PCBs	mg/L	0.0001	0.001	----- 0.006
Chlorinated Pesticides	mg/L	0.001	0.001	-----

Location of sample stations at dredge site are shown on attached sheet 1.

(a) State Water Resources Control Board, 1978
Ocean Waters of California

EAL Corporation

2030 Wright Avenue
Richmond, California 94804
(415) 235-2633
TWX 910 382 8132

Thermo Electron Corporation

ANALYSIS REPORT

Customer: Harding Lawson Associates
P.O. Box 578
Novato, CA 94304

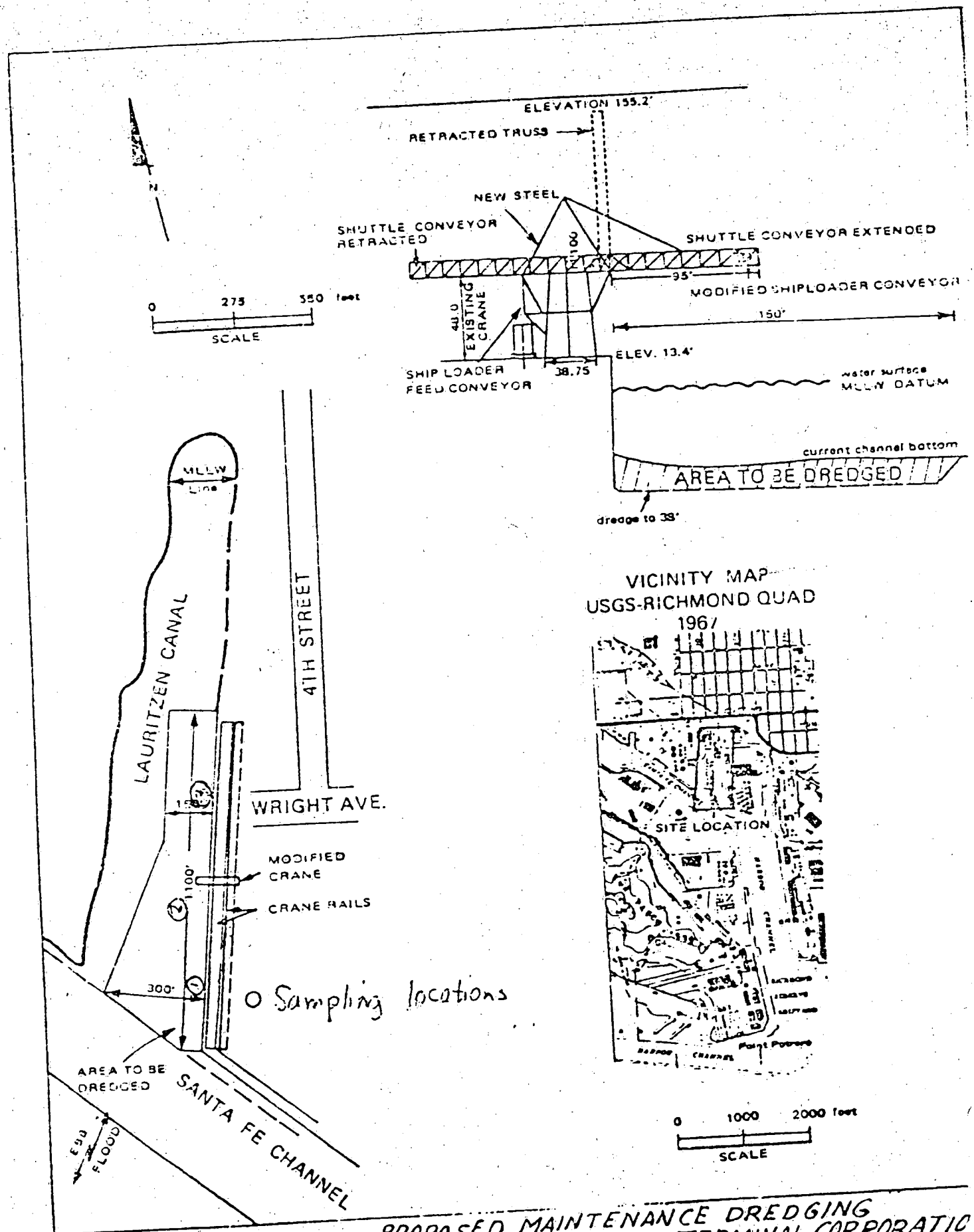
Attention: Jim Davies

Date: December 7, 1981
Samples Received: 10/26/81
EAL W. O. No. 455300-5114
Purchase Order No.: 13002 001.01

Analysis	Units	255-63-1 Boring 1	255-63-2 Boring 2	255-63-3 Boring 3	255-63-4 Composite
Mercury	µg/L	<0.5	<0.5	3.1	--
Cadmium	µg/L	<5	<5	<5	--
Lead	µg/L	<20	<20	<20	--
Oil & Grease	mg/L	<5	<5	<5	--
Petroleum Hydrocarbons	mg/L	<5	<5	<5	--
PCB	µg/L	<0.1	<0.1	<0.1	--
Chlorinated Pesticides	µg/L	<1	<1	<1	
Particle Size Distribution: Sand >62µ	%	--	--	--	25
Silt 2-62µ	%	--	--	--	44
Clay <2µ	%	--	--	--	31

Larry E. Penfold
Larry Penfold
Program Manager

LP:dg



PROPOSED MAINTENANCE DREDGING
AT LEVIN-RICHMOND TERMINAL CORPORATIO
IN SAN FRANCISCO BAY, LAURITZEN CANAL
AT 4th STREET AND WRIGHT AVENUE
IN THE CITY OF RICHMOND CONTRA
COSTA COUNTY CALIFORNIA

Pacific
Environmental
Laboratory

ELUTRIATE ANALYSES

SUMMARY

OF

PROPOSED DREDGE MATERIALS

HLA JOB 13175,001.01

Pacific Environmental Laboratory
657 Howard Street
San Francisco, California 94105
415 495 6627

ELUTRIATE ANALYSIS REPORT

Received 5/12/83
Reported 5/24/83

For Harding Lawson Associates Report to Mr. James C. Davies

Address 7655 Redwood Blvd., P.O. Box 578, Novato, CA 94948

Lab. No.		831155	831156		831157-C
Source	Sample I.D.:	Boring #1	Boring #2		Elutriate Preparation & Control Water: Alcatraz Island Disposal Site Water
Levin HLA Job No. 13175,001.01					
Date Collected		5/6/83	5/6/83		5/10/83
Time Collected		-	-		-
Collected by		HLA			

Analysis	Units	Analytical Results			
Oil and Grease (1)	Mg/L	<1.0	<1.0		<1.0
Petroleum Hydrocarbons (1)	Mg/L	<1.0	<1.0		<1.0
Cadmium (Cd)* (2)	Mg/L	<0.002	<0.002		<0.002
Lead (Pb)* (2)	Mg/L	<0.01	<0.01		<0.01
Mercury (Hg)** (2)	Mg/L	0.0022	<0.0002		<0.0002

Comments (1) Analysis performed on supernate portion of the elutriate
(2) Analysis on filtrate through 0.45 micron membrane filter
* Analysis by Atomic Absorption Spectrophotometer
** Analysis by Cold Vapor Atomic Absorption Spectrophotometer

Reference: San Francisco District, Corps of Engineers Public Notice No. 78-1 (Final), 30 July 1979, "Supplemental Regional Procedures for Evaluating Discharges of or Fill Material into Waters of the United States".

Analyst TN, JW, DT, AD, RS / DT

Director James Dragun for T. G. Erler

Pacific Environmental Laboratory
657 Howard Street
San Francisco, California 94105
415 495-6627

ELUTRIATE ANALYSIS REPORT

Received 5/13/83
Reported 5/24/83

For Harding Lawson Associates Report to Mr. James C. Davies

Address 7655 Redwood Blvd., P.O. Box 578, Novato, CA 94948

Lab. No.		831155	831156		831157-C
Source	Sample I.D.:	Boring #1	Boring #2		Elutriate Preparation & Control Water:
Levin HLA Job No. 13175,001.01					Alcatraz Island Disposal Site Water
Treatment					
Date Collected		5/6/83	5/6/83		5/10/83
Time Collected		-	-		-
Collected by		HLA			

Analysis	Units	Analytical Results			
1) Polychlorinated Biphenyls (PCBs) (1)	Mg/L	<0.00010	<0.00010		<0.00010
2) BHC	Mg/L	0.00001	0.00003		<0.00001
3) P,P-DDD	Mg/L	0.00012	0.00004		<0.00002
4) Toxaphene	Mg/L	<0.0010	<0.0010		<0.0010
5) Other Chlorinated Pesticides (2)	Mg/L	All less than 0.00010	All less than 0.00010		All less than 0.00010
6) Total Identifiable Chlorinated Hydrocarbons (TICH)	Mg/L	0.00013	0.00007		<0.0010

Comments Analysis by Gas-Liquid Chromatography.
Analysis performed on supernatant portion of the elutriate.
(1) Analysis would have detected aroclors 1242-1260.
(2) Analysis would have detected Aldrin, Chlordane, Dieldrin, DDE, DDT, Endrin, Heptachlor, Heptachlor Epoxide, and Methoxychlor.

Reference: San Francisco District, Corps of Engineers Public Notice No. 78-1 (Final), 30 July 1979, "Supplemental Regional Procedures for Evaluating Discharges of or Fill Material into Waters of the United States".

Analyst TN, JW, DT, AD, RS/DT

Director James Dragun for T. G. Erler

Pacific
Environmental
Laboratory

SUMMARY ANALYSIS

OF

PROPOSED ALCATRAZ ISLAND

DISPOSAL SITE WATER

HLA JOB NO. 13175,001.01

Pacific Environmental Laboratory
657 Howard Street
San Francisco, California 94105
415 495 6627

DISPOSAL SITE WATER ANALYSIS REPORT

Received 5/13/83
Reported 5/24/83

For Harding Lawson Associates Report to Mr. James C. Davies

Address 7655 Redwood Blvd., P.O. Box 578, Novato, CA 94948

Lab. No.		831157-A		
Source	Sample I.D.:	Proposed Disposal Site Water		
S.F. 11 Alcatraz Island Disposal Site HLA Job No. 13175,001.01				
Date Collected		5/10/83		
Time Collected		-		
Collected by		HLA		

Analysis	Units	Analytical Results			
Oil and Grease	Mg/L	<1.0			
Petroleum Hydrocarbons	Mg/L	<1.0			
Cadmium (Cd)*	Mg/L	<0.002			
Lead (Pb)*	Mg/L	<0.01			
Mercury (Hg)**	Mg/L	<0.0002			

Comments * Analysis by Atomic Absorption Spectrophotometer
** Analysis by Cold-Vapor Atomic Absorption Spectrophotometer

Reference: San Francisco District, Corps of Engineers Public Notice No. 78-1 (Final), 30 July 1979, "Supplemental Regional Procedures for Evaluating Discharges of or Fill Material into Waters of the United States".

Analyst TN, JW, DT, AD, RS /DT

Director James Hagum for
T. G. Erler

Pacific Environmental Laboratory
657 Howard Street
San Francisco, California 94105
415-495-6627

ELUTRIATE ANALYSIS REPORT

Received 5/13/83
Reported 5/24/83

For Harding Lawson Associates Report to Mr. James C. Davies

Address 7655 Redwood Blvd., P.O. Box 578, Novato, CA 94948

Lab. No.		831157-A			
Source	Sample I.D.:	Proposed Disposal Site Water			
S.F. 11 Alcatraz Island Disposal Site HLA Job No. 13175,001.01					
Date Collected		5/10/83			
Time Collected		-			
Collected by		HLA			

Analysis	Units	Analytical Results			
		CHLORINATED HYDROCARBONS			
1) Polychlorinated Biphenyls (PCBs) (1)	Mg/L	<0.00010			
2) Chlorinated Pesticides (2)	Mg/L	All less than 0.00010			
3) Toxaphene	Mg/L	<0.0010			
4) Total Identifiable Chlorinated Hydrocarbons (TICH)	Mg/L	<0.0010			

Comments Analysis by Gas-Liquid Chromatography.
Analysis performed on supernatant portion of the elutriate.
(1) Analysis would have detected aroclors 1242-1260.
(2) Analysis would have detected Aldrin, BHC, Chlordane, Dieldrin, DDD, DDE, DDT, Endrin, Heptachlor, Heptachlor Epoxide, and Methoxychlor.

Reference: San Francisco District, Corps of Engineers Public Notice No. 78-1 (Final), 30 July 1979, "Supplemental Regional Procedures for Evaluating Discharges of or Fill Material into Waters of the United States".

Analyst TN, JW, DT, AD, RS /DT

Director James Dragun for T.G. Erler

Pacific
Environmental
Laboratory

PARTICLE SIZE ANALYSES

SUMMARY

OF

PROPOSED DREDGE MATERIALS

HLA JOB NO. 13175,001.01

Pacific Environmental Laboratory
657 Howard Street
San Francisco, California 94105
415-495-6627

REPORT OF
PROPOSED DREDGE MATERIAL ANALYSES

Received 5/13/83
Reported 5/24/83

For Harding Lawson Associates Report to Mr. James C. Davies

Address 7655 Redwood Blvd., P.O. Box 578, Novato, CA 94948

Lab. No.	831155			
Source Sample I.D.:	Boring #1			
Levin HLA Job No. 13175,001.01				
Date Collected	5/6/83			
Time Collected	-			
Collected by	HLA			

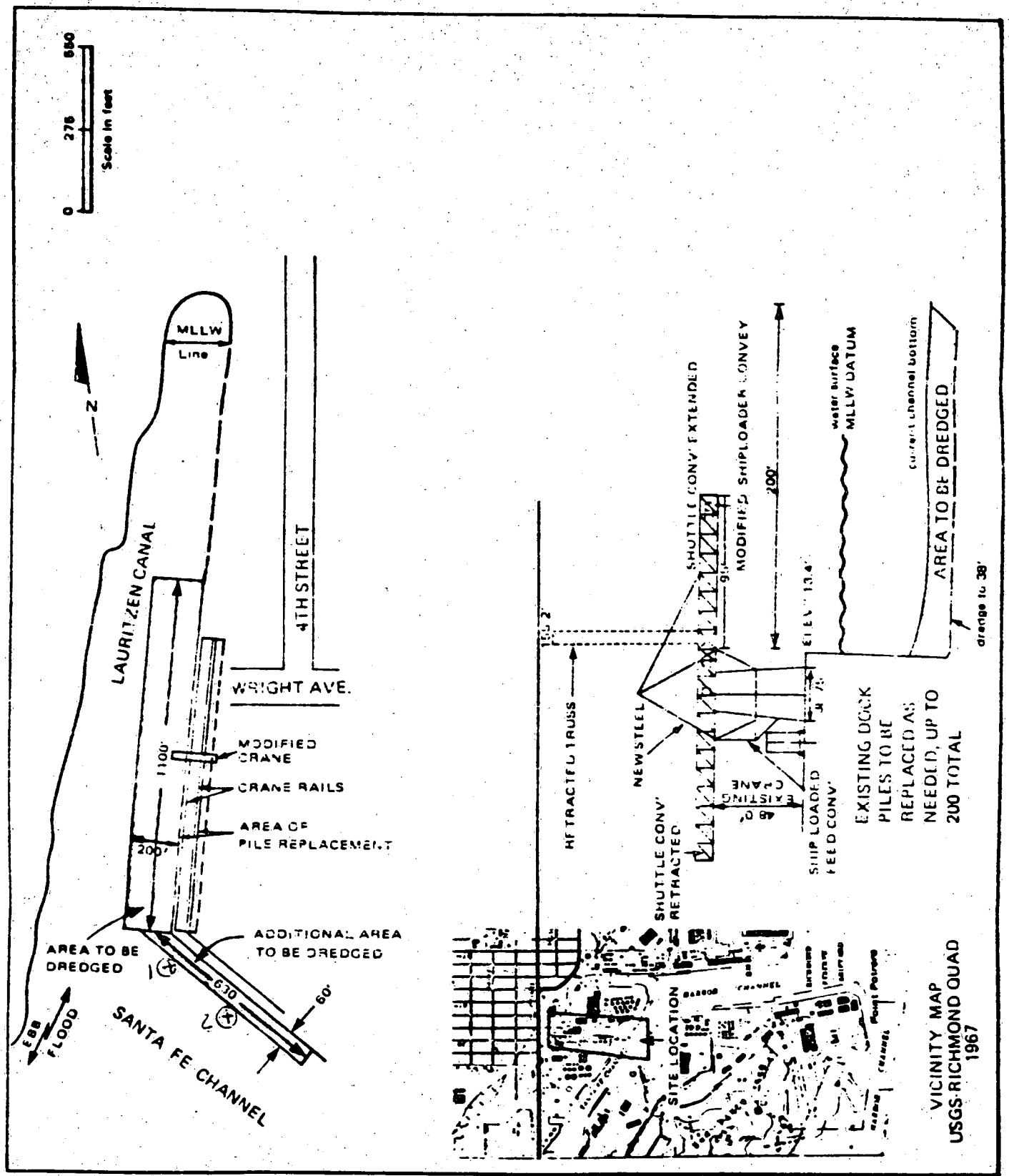
Analysis	Units	Analytical Results			
		- SIEVE ANALYSIS -			
CLASSIFICATION	Size μ	- PARTICLE SIZE DISTRIBUTION % -			
SAND	>500	1.19			
VERY FINE SAND	500 - 63	13.75			
SILT-CLAY	<63	85.06			

Comments

Analysis by: "Guidelines for the Preparation of Technical Reports on Waste Discharges to the Ocean and for Monitoring the Effects of Waste Discharges in the Ocean", August 1972, State Water Resources Control Board and Classification as specified by Bay Area Regional Water Quality Control Board.

Analyst TN, JW, DT, AD, RS/DT

Director T. C. Erler



Harding Lawson Associates
Engineers Geologists
& Geophysicists

LEVIN RICHMOND TERMINAL

Revised to add Santa Fe
Channel Maintenance

PLATE
1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
F. Hamilton	13,002,001.01		11/6/81		2/83

Elutriate Analyses
For Tidal Waters

CONTAMINANTS OF CONCERN	STATE WATER QUALITY OBJECTIVES (mg/l)	(ug/l)
CADMIUM (CD)	03	30.0
MERCURY (HG)	0 0014	1.40
LEAD (PB)	0 080	80.0
OIL & GREASE	75	75000.0
PETROLEUM HYDROCAREONS	---(b)	
PCB'S AND TOTAL CHLORINATED PESTICIDES	0 006 (c)	6.0

(1) State Water Resources Control Bd, 1978, "Ocean Waters of California".

NOTES

(a) When comparing elutriate results with State Water Quality Objectives, mix volume and mixing zone are to be considered, if appropriate

(b) When there are no water quality objectives/criteria, elutriate results and disposal site water quality will be statistically compared.

(C) Total chlorinated perticides and PCB's shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, and polychlorinated biphenyls.

Material Testing Conversions

#200 Sieve = 0.074 mm = 74 microns

1.32 g/cc = 81 lbs/ft^3 = 4.5 liquidity Index

$$\text{Liquidity Index} = \frac{\text{Water Content} - \text{Plastic Limit}}{\text{Liquid Limit} - \text{Plastic Limit}}$$